Clinical Medicine

Original Articles for July, 1956

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EDITORIAL

Parental Responsibility for Juvenile Delinquency

Poorly inhibited antisocial impulses of parents are often the basic cause of the destructive behavior of the children

JAMES M. NORTHINGTON, M.D., *Editor*

In many years of reading, I do not recall having seen one writing by a member of the Mayo Clinic which could be called "extremist." Progressive this group has always been, but never has there been any evidence of the belief that all change is progress; and often they exercised a wholesome controlling influence on unjustified enthusiasms.

The revolutionary changes in the ideas of parents and teachers, brought about principally, in my opinion, by psychologists and psychiatrists, have given great concern to a large element of the thinking people.

Two members of this justly famous clinic, a psychiatrist and a pediatrician, have written the most sensible and profound article on this subject that has ever come to my attention.* What is said, with only slight and immaterial changes here and there, is passed on to our readers in the assured hope that great and lasting good will result.

Mothers exclaim that they are unable to cope with a child's misbehavior. They say, "I can't do a thing with him." Perhaps a child has become a problem in management at home or at school. Vandalism, truancy or theft may have been committed, and the parents seem at a complete loss as to how to cope with the problem.

*Johnson, A. M. & Burke, E. C., *Proc. Staff Meet., Mayo Clin.*, 30:24, 559-565, 1955.

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CONTROL WILL NOT MAKE NEUROTICS

Some mothers admit that Johnny had been allowed to do pretty much as he pleased, lest he become frustrated and neurotic. "All the books say I shouldn't spank him." The child must be acquainted early in life with the rules of living. The primary unit of society is the family and all such teaching should begin there. Lack of spanking or punishment is not the explanation for delinquency.

PARENTS TO BLAME

Antisocial behavior among children is increasing, but at little, if any, greater rate than is misbehavior in the adult population. We do *not* feel that adolescence is a volatile age when anything can happen just because of that age. We subscribe to the opinion that adolescence is a conservative age, unless misguided adults interfere with, or disrupt, a fine balance. Our thesis is that for a large share of the antisocial behavior of today, the responsibility lies in an unwitting sanction or unconscious encouragement of such antisocial behavior by one or both parents, so that the parent achieves vicarious gratification of his own poorly integrated forbidden impulses. Consciously, most parents are deeply concerned with the child's misguided behavior, but have no idea that he or she, the parent, may be promoting it.

A child's conscience is not inherited ready-made but is developed, especially during the first six years of life, through identification in great detail with the total behavior of parents. To an equal extent, conscience develops from the parents' conscious and unconscious image of the child and from their concepts of and hopes for a child. The attitude of many parents has been to avoid drastic repression of the child, lest he become neurotic or behave in an antisocial manner. Such reasoning has been a great error.

Psychiatrists, as well as parents, have erred in assuming that prohibitions in all forms lead to too much of a feeling of guilt and thus neurosis. Prohibitions in themselves do not lead to feelings of guilt, rather, they are an important aspect of a child's security. For preventing the development of a neurosis, the prohibition of antisocial activity merely requires a parent mature enough to manage the resentment expressed by the child over the limitations that society rightly demands. It is evident that stealing, setting fires, murder and sexual destructiveness cannot be tolerated in our society. They must be prohibited firmly and completely. An act of specific antisocial behavior should arouse a feeling of guilt, but the feeling of guilt is not unhealthy. Prohibitions against antisocial activity may provoke anger in a child, but the child is not likely to become neurotic if he can express his anger. His rage may be expressed, but his actions have not been antisocial. Problems arising as a consequence of a strict conscience are easier to manage than is delinquency resulting from a laxity or defect of conscience.

WHY THIS ONE CHILD STEALS

The reader asks, "How do you explain that one child may steal, whereas all the other children in the family are honest?" Parental attitudes differ toward each child, depending on multiple influence in

the parents' own pasts. A tragic fact is that one child is selected *unconsciously* as the victim, or "black sheep," to live out the parents' own conscience, with their unconscious drives toward antisocial behavior. In some cases there is only one victim-child in a family. In others, one child steals, another becomes truant and a third engages in destructive behavior. Careful study elaborates how each child is selected to live out a particular need of one or both parents by the parents' pathologic needs from their own past.

"OLD FASHIONED" TEACHING OF MORALITY BEST

Every little child must learn what truth is. This requires a kindly, consistent training. A mother said of her son, 12 years old: "He has always been a liar. The truth is not in him. Beatings do no good. I tell his father that that child was born a liar like his father's brother. Since he was four years old, I have shamed him and told him he was not like his brothers, and I warned him that I did not know what would become of him." Careful study of the mother revealed that from his birth she had identifiefid the boy with his father's brother, whom she thoroughly disliked as an "unreliable liar and braggart." This mother had not wanted the child when she knew she was pregnant, being at that time unhappy in her marriage. Here we observe a mother, hostile and unhappy, selecting a victim. The choice of misbehavior was *lying*, fostered by frequent references to his uncle and statements that the mother had no confidence in her ability to engender respect for the truth in her son. The child then sees that his mother's image of him for the future is one of falseness and unreliability.

LIKE MOTHER LIKE CHILD

The great educator of 300 years ago, John Locke, recognized that the antisocial child was reared by inherently antisocial parents whom the child was imitating. Through studying the parents as carefully as the child, it became clear that parents not only enjoy children's successes, but also derive unconscious gratification from children's failures, such as failure to go along with society's mores. Hostile toward a particular child, the parents foster antisocial behabior in keeping with their own unconscious impulses toward similar misbehavior.

Parents, confused about impulses, vacillate, evade, and befog issues that confuse the child. In the parent, two opposing forces are operating—prohibition on one hand, and in the next breath, unconscious permission. A parent tells the child that it is wrong to steal, but covers up when he commits a theft. The child immediately learns the significance of his maneuver. Tommy takes 50 cents from his father's dresser. The father tells Tommy that the money must be returned. The mother assures the father that she spent the money. Such a parent does the same thing with regard to thefts outside the home, consoling herself with the thought that Tommy will outgrow his thieving propensities.

ACTIONS SPEAK LOUDER THAN WORDS

Children observe early a parent short-changing tradesmen, and are so taught that honesty can be short-circuited in favor of opportunism. Entering movies or riding buses at rates based on other than one's true

age are other acts of petty thievery. Many parents encourage undersized 12-year-olds to pay only half-rate at the movie. When parents write illicit excuses for Mary's absence from school, they begin a train of untenable situations for themselves. Temper tantrums often add force to the child's demands. These parents make and break promises lightly. The child soon learns that at home "one's word" is of shallow significance.

Parents tell us of Johnny's destructive behavior at school with an interested smile, obviously taking delight in such vandalistic behavior. Punishment at the end of the discussion is of little value. The child will repeat his vandalism, truancy or stealing. Some parents are all too inclined to accept flimsy stories about where Peter found the dollar or the trinket. The child observes the conflicting play of prohibition and permission on the parent's face and a train of tragic events is started. In every family investigated for antisocial behavior, the large degree of deception practiced is easily detected. "Do this, but don't tell so and so." Tricks and ruses are employed to achieve desired ends by adults and children—even to get the child to the psychiatric clinic.

"NO" MUST MEAN "NO"; "YES" MUST MEAN "YES"

In the normal, we observe that certain prohibitions and taboos are absolute, with no alternative, enforced in a calm, earnest atmosphere. The parent knows that this loved child will, with training, become a reliable, fine person. Such a normal parent, adhering consistently to training, does *not* let little things go by. Such parents have respect for the child's property, and would not even open a child's mail, read a child's diary, or open a child's purse without permission. A rigid setting of limits and taboos applies to old and young alike, and ensures that the young have teachers who deserve to be examples in all aspects of social behavior.

"OLD FASHIONED" DECENCY VS. "MODERN" FRANKNESS

In the atmosphere of "modern frankness," unstable parents go far beyond good sense in their compulsive drive to make sex and bathroom functions an open book. The children sense the parents' tension, eagerness and lack of tranquility in this setting, and the child's attention becomes far too fixated for healthy emotional development. Any child of five or six begins to give indications of a wish for privacy. Too often these wishes are overridden by the parents. Children go through phases of not wanting to be hugged too closely, but this desire also is often disregarded. Only parents poorly adjusted in their own marriage have need for pathologic closeness with the child.

It is no longer a mystery how the child's emotional life becomes distorted into perversions and sadistic sexual practices, or as to how was developed a personality capable of committing a sexual crime. Much has been learned that explains those who grow up and marry, but who can never love the spouse. Unconscious hate ruins the marriage, all from a childhood overly stimulated emotionally by a parent. Undue embracing and physical closeness with a parent through a child's adolescence arouses unconscious hatred which carries over into a later mar-

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riage. In the sexual area, delinquencies are largely unconsciously generated and fostered in the home. Undue interest and smiling eagerness, suspicious questions or dire warnings, all do harm. No lessons can be taught an adolescent when avid parental interest is evidenced over sexual misbehavior. Punishment is then of no validity or use. Children behave sexually in accordance with the parents' conscious and unconscious image of the child.

PROHIBITIONS MUST STAND

We are proposing that the absolute cultural prohibitions still hold and must be rigidly inculcated in the home where the first six or seven years of life and training are essential to development of character. Absolute rigidity against murder, arson, theft and sexual destructiveness prevents individual delinquency in the non-gang sociologic areas. Other factors come into play to cause neurosis. A child need not be prevented from voicing his resentment of prohibitions, but the cultural prohibitions of our society must stand. Treatment of a child who is indulging in antisocial behavior in the home and is subject to parental sanction and influence, involves treatment of the parents as intensively as treatment of the child. This is a long and expensive procedure, but the best now known.

PARENTAL SANCTION OF CRIME USUALLY UNCONSCIOUS

Parental sanction of antisocial behavior usually is unconscious. The mischief perpetrated by the poorly integrated parents of "respectable" status might well be curbed if it were generally conceded that delinquent behavior is not usually due to heredity, bad companions, poor schools or divorce. The poorly inhibited antisocial impulses of adults then may not so readily find expression in making scapegoats of their children. Perhaps such adults might become neurotic, evidencing emotional conflicts in which conscience has prohibited direct expression of an urge to antisocial action. Troublesome as such neuroses may be, they are preferable to antisocial behavior. The psychiatric therapist affixes no blame, but would interpose a degree of understanding that would divert conflicts of parents toward individual neuroses rather than toward vicarious gratifications through the misbehavior of children.

Straight Thinking and Simple Justice

Poverty of a patient commands the gratuitous services of a physician. When, however, the cost of medical service to the poor, together with that of other necessities of life, is assumed by local, state or federal government agencies, by means of tax money of which an equitable share has been paid by physicians, there is no obligation for him to contribute further of his time, skill or resources unless for the benefit of the poor patient in a teaching hospital or one who is not eligible for public relief.

Editorial, *New England J. Med.*, 252:874, 1955.

ORIGINAL ARTICLES

Rationalizing the Problem of Acute Poisoning

It is vitally important that the physician is cognizant of advances in therapy and is aware of the toxicity present in the newer drugs

THEODORE C. WEST, Ph.D.* and T. A. LOOMIS, M.D., Ph.D.*, *Seattle, Washington*

The per capita incidence of fatal accidental poisonings has been declining during the years. However, the decline in death rate may not reflect the trend regarding the incidence of poisoning *per se*. The actual incidence of acute non-lethal poisonings can only be estimated. Many such cases are not reported, some are unrecognized. However, with readily available potentially toxic agents in the home medicine closet, the drug most implicated in human poisoning will often reflect the current national fad of self medication. Patterns of favorite poisons change with the years.

In 1954, 80% of all fatal accidental poisonings occurred in the home,[1] the majority of these subacute, some acute and potentially fatal. No physician can prepare in detail for all the variations in cause, diagnosis and treatment that may confront him. Any physician can acquaint himself with the principles involved in acute poisoning and deal adequately with the emergency. Prophylaxis, fundamental principles and guides to treatment of acute poisoning will be considered.

PROPHYLAXIS

Acute poisoning may be deliberate

* Department of Pharmacology, School of Medicine University of Washington, Seattle, Washington.

1. Accident Facts, National Safety Council, Chicago, 1955.

or accidental. Of the deliberate, the majority are suicide attempts. Accidental poisoning results from carelessness or ignorance; suicidal poisoning from emotional problems. In both, sociological and psychological factors have an important place in the etiology. The family physician, in his own practice or as part of a joint community effort, may serve to reduce the incidence of poisoning.

In 1954, non-gaseous poisons ranked seventh as the cause of fatal accidents.[1] From the values indicated in Table 1, it may be shown that 32% of such deaths occurred in the home in those in the first 4 years of life, less than 1% between the ages of 5 and 14 years. Clearly, here is a case for instruction of the parents. Furthermore, as indicated in Table 2, from 1948 to 1952 most accidental poisoning deaths in the preschool group occurred between the ages of one and two. The child of this age is not responsible. Leaving toxic drugs and household chemicals in places accessible to creepers and toddlers amounts to criminal negligence. This is not meant to detract from the necessity for instruction of children in regard to the dangerous nature of the household items implicated.

Deaths from poison gases ranked eighth in 1954,[1] with the incidence little less than that for solid and liquid agents. Here the greatest proportion occurred among the aged (Table 3), reflecting the problem of defective heating and other living facilities of so many in this group. Here again is a case for adult instruction in the drive for prevention.

The agents most frequently encountered in *all* poisoning, accidental or deliberate, are carbon monoxide and derivatives of barbituric acid. Even among small children, barbiturates have as important a role as aspirin and kerosene. The importance of measures to prevent poisoning by carbon monoxide and barbiturates is obvious. In general, poisoning prevention begins in the home. Wise, insistent counsel from

TABLE 1*

Accidental fatalities in the home from non-gaseous poisons during 1954.

Age group	0-4	5-14	15-24	25-44	45-64	65 and over	Total
Number of deaths	270	10	50	280	340	100	1150

TABLE 2*

Fatalities in the home from accidental poisoning from 1948-1952.

Age group	less than 1 yr.	1 yr.	2 yr.	3 yr.	4 yr.	total 0-4 yr.	5 yr. & over	total all ages
Number of deaths	267	1086	476	194	70	2093	5498	7591

TABLE 3*

Accidental Fatalities in the home from poison gases during 1954.

Age group	0-4	5-14	15-24	25-44	45-64	65 and over	Total
Number of deaths	60	30	170	200	280	260**	1000

* After Accident Facts, National Safety Council, 1955.
** Per 100,000 population in this age group the incidence exceeds all other groups.

the family physician may be essential to initiate the campaign.

FUNDAMENTAL PRINCIPLES

Acute poisoning represents overdosage of some chemical agent, whether or not that agent originally was intended for human consumption. The response to overdosage may be local or systemic, and the onset of the most serious manifestation of impairment may be immediate or delayed. The intensity of the effect of a chemical agent follows a characteristic concentration - response curve, in which, within limits, the degree of response usually is a linear function of the logarithm of concentration. With increasing concentration of the agent, a point will be reached at which the degree of response no longer is compatible with the function of a cell type, tissue, organ or organ system. When systemic toxicity is involved, death occurs because of the failure of an essential portion of the whole.

Basically then, when acute poisoning is diagnosed, the problem is to modify the concentration-response curve so that it will not terminate fatally. This may be achieved by *removal* or *antagonism*.

REMOVAL

The poison may be separated from the victim by lavage, decontamination, or changing the atmospheric environment. Effective removal may be possible. In this instance, the mass of the toxic agent is not separated from the individual. Through deliberate chemical manipulation, the toxic activity is reduced or abolished: e.g., the formation of a complex of arsenic or mercury with dimercaprol, or conversion of cyanide to thiocyanate through the intervention of thiosulfate.

ANTAGONISM

Antagonism establishes a new concentration — response relationship. The original identity of the toxic agent is not lost, but its toxicological activity is reduced. Antagonism may operate through several general mechanisms:

1. One anatomical or physiological structure may be pitted against another, as in curare antagonism of strychnine convulsions.
2. There may be a direct effect in the opposite direction at the site of action of the poison, as in picrotoxin antagonism to barbiturates.
3. The response of cellular receptors to the agent may be blocked, as in the case of atropine blockage of anticholinesterase drug action.

The fundamental principles of poisoning and its management are easy to delineate but hard to practice. The variety of potential poisons is tremendous. A different specific application of the general principles is necessary in many of them. Moreover, for therapy to be rational, the diagnosis of poisoning *per se*, and then the nature of the poison must be determined initially. The very nature of acute poisoning may demand quick organized thinking and prompt decision.

GUIDES TO TREATMENT

The average home will contain from 50 to 100 chemical compounds capable of being harmful to life if improperly consumed. For many commonly used household chemicals, there is little information available in the literature regarding toxic manifestations and even less information regarding specific and

proved therapy. Yet the physician is obligated to be acquainted with sufficient facts to constitute an adequate knowledge of how any poisoning situation should be handled.

Only rarely does poisoning have the elements of the accidental *and* the intentional; e.g., a person intoxicated with alcohol takes additional alcohol and possibly a barbiturate; then after retiring, awakens and takes more barbiturate until coma ensues. Poisoning with suicidal intent is a less complicated therapeutic problem than is accidental poisoning. The suicidal subject usually intentionally takes a drug in great excess of the recommended dose. The sequence of events may be as follows: either the subject accomplishes his purpose before the act is known, or the dose of the intoxicant is insufficient to produce death and a moderately to severely poisoned subject is hospitalized.

ACCIDENTAL ORAL POISONING

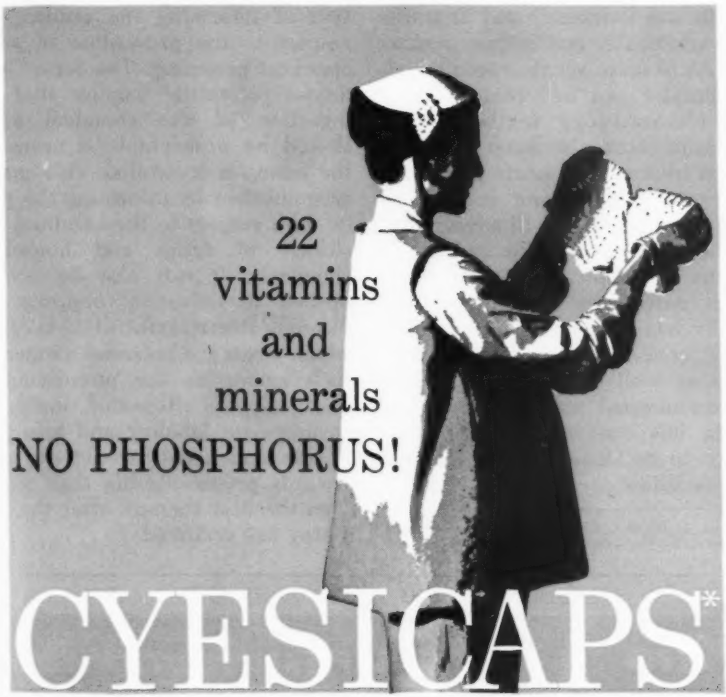
This paper is concerned more with accidental poisoning by oral consumption of any one of many types of chemical agents. A simple rational scheme to follow in any such case should interest all physicians. The principal concern of the physician is the proper care of the patient, and starts with the first impression made by the patient. Depending on this immediate impression, one of several courses may be followed.

That it is a case of poisoning may be obvious; more often it is not. Rather, the problem is to determine if an intoxicant was actually consumed and, if so, how much and when. A hysterical mother of a calm, apparently normal child, who has ingested considerably less of an intoxicant than he has spilled on his clothes, is a common scene. In such a case a physician is prone to disbelieve the mother's statements regarding the extent of exposure of the child. The time lapse since the consumption of the drug and the amount of intoxicant consumed are of great importance. Many digitalis preparations will only slowly induce toxic manifestations and the Rauwolfia alkaloids will have a slow onset of action. The lack of symptoms in a child thought to be poisoned by a rapidly-acting drug is significant.

It is desirable to empty the stomach by the use of a tube, in every case of oral poisoning in which the time interval following consumption of the drug was not excessive, and in which serious toxic manifestations would be expected to appear as a result of the direct action of the intoxicant. Those who oppose the use of gastric lavage in kerosene poisoning, because of the possible aspiration of kerosene into the lungs with subsequent pneumonitis, will usually agree that it is better to take this chance than to have a dead patient from an overdose of kerosene. Even in those rare cases of poisoning from corrosive agents in which the lavage tube may rupture a necrotized esophagus, it is better to gently lavage the stomach rather than to allow additional excessive destruction of tissue to take place as a result of the action of the intoxicant.

FAMILY PHYSICIAN MUST BE ALERT

The physician must continue to keep acquainted with the toxicity of the newer drugs that appear and with the advances in therapy of



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Iodine (as KI)	0.1 mg.
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poisoning from those agents that are frequently involved — in children aspirin and kerosene,[2] and in adults the barbiturates and carbon monoxide.[3] As to these agents, recommended therapy can be obtained from any pharmacology textbook. The physician must also keep informed on the treatment of acute poisoning. Most medical teaching institutions have personnel who will advise physicians regarding specific and symptomatic treatment of individual poisoning cases. The local pharmacist usually has access to reference material concerning poisoning with drugs as well as access to specific pharmacological antidotes. Few areas in this country are so remote as not to be in telephone range of such facilities.

2. Arena, J. M., *J.A.M.A.*, 159: 1537, 1955.
3. Brooke, E. M., *Lancet*, 260: 150, 1956.

It should be emphasized that the physician should assume the obligation of informing the public with respect to the prevention of acute chemical poisoning. The term "accidental poisoning" implies that the ingestion of the chemical agent should be *preventable* if access to the poison is controlled. This can be accomplished by informing the public with respect to the handling and storage of drugs and household chemicals. It can also be accomplished in industrial organizations through instructional activities which stress the potential dangers of such agents as the promiscuously used solvents. Repeated insistence on adequate labeling and safe care of chemical agents would do more towards preserving life than would even the best therapy after the poisoning has occurred.

Anesthesia in General Practice*

A possible anesthesia fatality may arise only once in a doctor's professional life, but if he knows what to do, a life may be saved

ADOLPHUS BRAY, M.D., *Franklin, Tennessee*

Although it is hardly possible for a doctor doing general practice to have as complete knowledge of this subject as a full-time anesthesiologist, he can acquire sufficient information and skill to practice safe and satisfactory anesthesia.

Probably 10% of my practice is represented by cases requiring anesthesia. I have given or supervised closely the giving of the anesthetic in more than 1,000 cases. There have been two fatalities, both preventable had I known at the time what I know now. I feel my experiences are worth relating because they demonstrate that anesthetics may be administered successfully as a part of general practice.

It is better to become thoroughly familiar with one type of procedure than to learn a number of others less well. For example, I have always used Pontocaine for spinal anesthesia, and have found it to be so satisfactory that I see no reason to change.

PREOPERATIVE CARE AND PREMEDICATION

The anesthetist should talk with the patient before the operation, preferably the day before. The patient may dread anesthesia, particularly the spinal type. The anesthetist should answer his questions and put

* Abridged from the Journal of the Tennessee State Medical Association with permission of Author and Journal.

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his mind at ease. In children, it is very important that the parents explain in advance what is going to happen.

For premedication in adults, scopolamine gr. 1/150 and Demerol 100 mg. is used. For old people or the poor-risk patient, the dose of each is reduced by one-half. For children, five years of age and under, and for adults 75 years of age and over, I use atropine, instead of scopolamine. Scopolamine allays anxiety and dries up the respiratory secretions. Demerol lessens reflex irritability and thereby decreases the amount of the anesthetic agent required. If a child is terrified of injections, Seconal or Nembutal may be given by rectum, the dose adjusted to weight and age. *All premedication is given intramuscularly 45 to 60 minutes in advance.* Before any anesthesia is started, the stomach should be empty. The order on the chart is, "Nothing by mouth after midnight," before a morning operation. In emergency surgery, if there is food in the stomach, a spinal anesthetic should be used if not definitely contraindicated. In any case, if there is food in the stomach and the operation can possibly be delayed, this should be done for at least 12 hours.

Any anemia—a hemoglobin of 11 gm. or more—should be corrected. If excessive blood loss is anticipated, cross matched blood should be on hand ready to give. In an emergency, Type O blood can be given regardless of the blood type.

ANESTHESIA IN CHILDREN

For small children, Vinethene induction is used. It works more rapidly than ether and must be given much more slowly. After the child is no longer aware of his surroundings, drop-ether is started. This has the widest margin of safety but one must allow sufficient air, not using heavy layers of gauze or the mask surrounded by towels to keep the air out. It takes 10 to 15 minutes to reach surgical anesthesia in this manner, and it should not be rushed. Ether should be dripped rapidly, not poured, and should be well distributed over the area of the nose and face. Occasionally, Pentothal rectally is used in children when full anesthesia is not needed—only enough of the drug to produce a light sleep —painful stimulation will arouse the child. Some uses for this method are in taking skull films—child must be motionless—in changing painful dressings or in removing many sutures. One should never rely on Pentothal rectally to produce surgical anesthesia, not even for setting fractures. The dose of 2.5% solution of Pentothal, given rectally, is 0.6 to 0.8 cc. per pound of body weight; e.g., for a 20-pound baby it would be (0.6 x 20) 12 cc. of a 2.5% Pentothal solution.

In T's and A's, the head should be lower than the feet, so blood and mucus will gravitate to the posterior pharynx and can be removed by suction. At the conclusion of the operation, the child should be placed on his abdomen with the head turned to one side so that secretions will flow out readily.

ANESTHETIC AGENTS

The principal agents in use are ether given by open drop, or as a nitrous oxide-oxygen-ether (called G.O.E.) combination; Cyclopropane; conduction anesthesia; and Pentothal or nitrous oxide-oxygen-Pento-

thal mixture.

Any of these agents works well if properly used, and can be deadly if improperly used. The skill and experience of the anesthetist is more important than the anesthetic agent selected.

STAGES AND SIGNS OF ANESTHESIA

Since the stages and signs are most clear-cut with ether, it will be used for illustration. Open-drop ether is entirely satisfactory. Giving it by means of an anesthetic machine has some advantages; the nitrous oxide induction is more pleasant and artificial respiration with 100% oxygen can be used at any time by manual compression of the breathing bag. Also the stages of surgical anesthesia may be reached more quickly. There are four stages of anesthesia.

Stage One. This extends to complete loss of consciousness. In many cases, this stage of analgesia serves for extraction of teeth, incision and drainage of abscesses and other procedures not requiring any muscular relaxation. In advance, the doctor must explain what will happen and how the patient will feel. The best subjects are sensible people who are able to cooperate. If the anesthesia goes beyond the point of loss of voluntary control, it should be lightened.

Stage Two. This stage lasts two to ten minutes from loss of consciousness to the beginning of the third stage. It is a period of excitement with usually at least some purposeless motion of the body and extremities and often wild activity requiring forcible restraint for a short time. All muscles are tense, and the eyelids when opened will close when released. Breathing is irregular and deep.

Stage Three is divided into four planes, depending on the degree of muscle relaxation.

Plane 1 begins when the breathing becomes regular and the wink reflex is no longer present. Motion of the eyeballs is present, and, toward the end of this plane, the vomiting, swallowing and gag reflexes disappear.

Plane 2. Respirations are fairly deep and regular and muscular relaxation is better. The eyeballs are motionless and centrally fixed. The depth and length of inspiration and expiration are equal, and a short pause follows expiration. Most surgery may be done in this plane.

Plane 3. Respirations are regular but not so deep. Inspiration is shortened.

Plane 4. Expiration is much longer than inspiration. Breathing is irregular, shallow and rapid. A more pronounced pause follows expiration. Breathing is mostly with the diaphragm, the abdominal wall moving rather violently. The pulse rate increases and the pupils are dilated. This plane should not be reached. It is dangerous and may be fatal. The blood pressure falls, and cyanosis may be evident. Due to the use of the accessary muscles of respiration in the neck, the jaw retracts with inspiration and gives the "tracheal tug." It is an easily seen sign.

Stage Four. No respiration is present and artificial respiration must be established.

ADMINISTERING THE VARIOUS ANESTHETIC AGENTS

1. *Ether.* For the open drop method, a suitable ether mask is used with one layer of stockinette or a few layers of gauze—not too thick;

no towel around the edges of the mask. The ether is begun slowly—10 drops a minute—the patient breathing through his mouth. The ether is increased as rapidly as tolerated. If any discomfort appears, it can be decreased, and the mask may be taken off momentarily. As soon as consciousness is lost, ether is dropped on as rapidly as possible, without pouring in a stream.

For the gas-oxygen-ether method, the breathing bag and tubing are flushed out with nitrous oxide to dispel any odor. Then with the bag empty the nitrous oxide is set on two liters and the oxygen on 500 cc. This gives 20% oxygen and 80% nitrous oxide. The bag is partially filled with this mixture, the mask held over the patient's face and shortly thereafter strapped down with some word of explanation and reassurance to the patient. After two minutes, or when consciousness has been lost, ether is slowly begun. It is gradually increased as rapidly as the patient tolerates it. As the ether is begun, the soda-lime absorber is turned off and the patient rebreathes his own CO_2. This stimulates respiration and makes for faster induction.

After the third stage is reached, the nitrous oxide may be decreased gradually or immediately. If in passing through the second stage, coughing, marked swallowing, vomiting or prolonged holding of the breath occurs, the ether concentration is too strong and the bag must be emptied and filled with gas-oxygen mixture alone, and ether begun again gradually. After the third stage has been reached, the CO_2 absorption can be turned on and the patient will no longer breathe his own CO_2. After the anesthesia has been going on for 10 to 15 minutes empty the bag to get rid of the N, if the bag has not already been emptied as stated above. As a rough guide, after ¾ to 1 oz. of ether is given, the patient is past the period of excitement (stage 2). For an anesthesia that lasts two hours, a total of 2 to 4 oz. of ether may be given; 3 to 6 oz. for one of 3 to 4 hours. The alcoholic is notoriously harder to induce and requires more ether. The patient should be maintained in plane 2 of the third stage for more surgery. For the few cases which require more muscular relaxation, plane 3 is necessary.

2. *Pentothal-Gas-Oxygen.* I am opposed to giving Pentothal alone and do not believe it should be used for abdominal surgery, or any surgery which requires much muscular relaxation, such as a hemorrhoidectomy or reduction of a lower-extremity fracture. There is a much smaller margin of safety with Pentothal than with ether. The dosage required for surgery is not greatly different from the lethal dose, and by injecting a few cc. of Pentothal, one may quickly put the patient into severe respiratory depression. When a mixture of 50% nitrous oxide and 50% oxygen is used with Pentothal, there is some anesthetic effect from the nitrous oxide and there is a higher concentration of oxygen than in room air. Both factors reduce the hazards of Pentothal—the former by reducing the amount of Pentothal needed, the latter by giving more oxygen. Also, by observing the breathing bag on the anesthesia machine, one can more accurately follow the respiration or lack thereof.

The technic: Dissolve 1 gm. of Pentothal in 30 cc. of saline or dis-

stilled water; give intravenously 1 cc. as a test dose and wait one minute. If no reaction, give 5 cc. while patient counts out loud. Then at one to two minute intervals, give 2 cc. until there is no response to pinching. As soon as consciousness is lost the breathing bag may be strapped to the face and the nitrous oxide-oxygen mixture started. As in all inhalation anesthesia, one must be constantly alert as to the patency of the patient's air-way. Often it is necessary to keep pressure on the angle of the jaw forward and upward. It is desirable, and sometimes essential, that one person control the intravenous injections and the more experienced one maintain the open air-way. The patient should be carried as lightly as possible, without marked slowing of the respiratory rate, and close to the point of "waking up," as shown by phonation, movements or breath-holding.

3. *Conduction Anesthesia.* In local infiltration, any local anesthetic agent is capable of causing a toxic reaction which can be fatal. Although a possible fatality may arise only once in a doctor's professional life, if he knows what to do, a life may be saved. It is said that 99% of toxic reactions are due to either too rapid injection into a very vascular area—such as the anorectal region—or accidental intravenous injection. Reactions may be immediate or delayed, the latter usually within 15 minutes. The symptoms are excitability, feeling of faintness, then drowsiness, then coma, or possibly drowsiness alone. By talking to the patient during the infiltration, one keeps a close check on the mental state. In the severe immediate reaction, death is sudden from both cardiac and respiratory failure. However, artificial respiration (preferably with the anesthesia mask and pure oxygen) should be given, and this could be life-saving. In the delayed reaction, there is hypotension and usually a slower and weaker pulse. If severe, a vasopressor agent (such as ephedrine sulfate) should be given intravenously—15 mg. doses q 3 to 5 minutes until the original blood pressure is restored. Also, artificial respiration should be started if the reaction is very severe. If convulsions occur, a soluble barbiturate—the least amount sufficient to stop the convulsions is given. Often 2 grains of Pentothal will suffice.

Procaine (Novocaine) is the most commonly used agent. Xylocaine is being used more generally. If more than an hour's anesthesia is desired (as in a pudendal block), epinephrine may be added in concentration of 1:100,000 or 1:200,000. This would be about 0.2 cc. of the usual 1:1,000 solution. The concentration should be as weak as possible, and the total injection minimal for the desired effects. The maximum dose of a 1% Procaine solution is 60 cc.

The most useful nerve block is pudental block in deliveries. Occasionally a wrist block is used. In the pudendal, after a skin wheal is raised midway between the anus and ischial tuberosity on each side, 10 cc. of 1% Xylocaine is deposited just medial to the tuberosity, and 10 cc. at the ischial spine. The anesthetic may be started at any time after the beginning of the second stage, and if a long second and third stage is anticipated, epinephrine may be added to allow time for episiotomy repair.

One method of spinal anesthesia

An insect bite, a contact dermatitis, a localized sunburn, or the many other skin conditions peculiar to summer—are minor at first, but may become considerably aggravated by irritation from scratching or from contact with clothing.

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and one drug, which has proven satisfactory in my experience, should not be used for surgery above the umbilicus. It is excellent for anorectal operations, giving relaxation of the sphincter muscle. A mixture of 3 to 10 mg. of Pontocaine, 1.0 cc. of 10% glucose and 1.0 cc. of 1:1,000 epinephrine is used. The glucose increases the specific gravity and provides a better control of the level of anesthesia. The epinephrine prolongs the duration of anesthesia to three hours or longer. Ten mg. of Pontocaine is the maximum dose. In pregnancy or at term, one-half the maximum dose—5 mg.—is used. This is sufficient for cesarean section, and the author believes spinal to be the anesthesia of choice in this operation because it causes the least fetal depression.

For surgery of the vagina and anorectal region, a 3 mg. dose may be given with the patient sitting upright and remaining so for 3 minutes. This procedure produces a "saddle block." Generally, there is less vomiting and nausea from spinal than from ether anesthesia. It should not be used when shock is present or anticipated, because part of the vasomotor reflexes are paralyzed and cannot adapt to the fall in blood pressure.

After the Pontocaine-glucose-epinephrine mixture is injected into the spinal canal, several pillows are quickly placed under the head and shoulders, and the position of the operating table changed from horizontal to Trendelenberg. The pillows prevent a too high level of anesthesia, but this must be closely followed for 30 minutes, after which time no further depression can be expected. Ephedrine sulphate, gr. 3/8, is given intramuscularly 15 minutes before the spinal puncture, and a tuberculin syringe filled with the ephedrine is ready for three to five minute doses intravenously if the blood pressure falls too much. For the first 15 minutes blood pressure and pulse are checked at 2 minute intervals, and then at 5 minute intervals.

ANALGESIA AND ANESTHESIA IN OBSTETRICS

With good contractions, and the cervix dilated 4 cm., 75 mg. Demerol and gr. 1/150 scopolamine are given intramuscularly or intravenously (preferably). After three hours, the scopolamine may be repeated—often this is not necessary. Four hours after the initial injection of Demerol, 50 to 75 mg. may be given. Neither this nor the scopolamine should be given within two hours of delivery. If there is any likelihood of fetal depression due to the drugs, Nalline should be given intravenously 5 to 10 minutes before delivery.

Trilene inhalations are used intermittently during the second stage, just before and during contractions. It may be used before the second stage in certain cases. If pain is severe, or an episiotomy is anticipated, a pudental block may be done. If the infant is born with depression from a drug, one must not become panicky and injure the baby by too vigorous measures. Usually gentle spanking of the sole of the foot will produce crying. Artificial respiration may be given by a seesawing motion of the baby's body. Before any resuscitation is done, the mouth and throat must be aspirated. I have not found the DeLee intratracheal catheter to be practical. Oxygen is of value only if the baby is breathing. Practically all babies will eventually breathe if

only gentle stimulation is used, but it is difficult to sit still and wait. If the placenta hasn't separated, Nalline may be given into the umbilical vein. A baby, depressed or premature, should be placed in a prewarmed incubator and kept under the direction of the physician in the delivery room. It is much better to prevent infant depression than to have to treat it.

INTRATRACHEAL ANESTHESIA

Every hospital, which has an anesthetic machine, should have a doctor or nurse trained to use intratracheal tubes. A patient who is not breathing may be given artificial respiration by this means with 100% oxygen more effectively than by any other method. The tubes range in size from 000 to 8. The laryngoscope blades come in three sizes—infant, child and adult. I know of no other means by which a tonsillectomy under general anesthesia may be done in an adult. For surgery about the neck and mouth, it is essential to provide more room for the surgeon and to insure a patient an air-way. In the poor-risk patient, a tube should be used because it may be necessary to "breathe" for the patient by manually compressing the breathing bag.

The technic of intratracheal intubation is described in any of the texts listed. It is not a difficult procedure in most instances, but this skill should be acquired under the direction of a qualified anesthesiologist.

RECOGNITION AND TREATMENT OF SHOCK

In anesthesia, there are two kinds of shock:

1. *Primary* (also called neurogenic). There is little change in pulse rate, though a deterioration in its quality and a fall in blood pressure occurs. It can be produced by stimulation of a nerve plexus such as the celiac or the carotid sinus, by abrupt changes in position or abnormal positions and in spinal or caudal anesthesia. Any activity which is producing the hypotension should be stopped till stability is restored; e.g., manipulation in the area of the celiac plexus. If the normal blood pressure is not quickly restored, ephedrine intravenously should be injected at three-minute intervals in 15 mg. dosage until normal pressure is restored.

2. *Secondary* (also traumatic or surgical shock). This is produced by a decrease in the circulating blood volume. It may be caused by hemorrhage, plasma loss as in burns, bile peritonitis, dehydration, etc. There is an increase in the pulse rate. This precedes a fall in blood pressure, and hence is a more delicate index of impending shock. When fully developed, pallor, sweating and clammy skin are added.

In shock due to hemorrhage, blood only should be used, and as most cases of shock of this type are produced by blood loss, blood is the most important replacement. Oxygen also is indicated. Anesthesia must be as light as possible. The vasopressor drugs are contraindicated.

It is of great importance to have an accurate initial record of the pulse and blood pressure. A pressure of 90/60 may be normal for one person; 120/80 may indicate shock in another. Hence recordings at five or ten minute intervals are more important than isolated readings. It

is of the utmost importance to anticipate shock and prevent it.

POSTOPERATIVE CARE

It is not necessary to use a large dressing with much adhesive tape. A small, folded layer of gauze to cover the wound, and one wide strip of adhesive to hold this in place, are all that is necessary, and this is much more comfortable and economical.

The so-called "gas pains" following surgery are due to partial paralytic ileus and are best relieved by having the patient take a few steps with the help of an assistant.

Gases Administered in Artificial Respiration

John Hunter suggested, in 1776, that inflation of the lungs with oxygen would be a valuable procedure in resuscitation. In 1780, Chaussier administered O_2 in asphyxia of the newborn and later devised a laryngeal tube for this purpose.

The administration of O_2 to patients receiving artificial respiration is given unqualified support.

It is recommended that in first aid practice CO_2 not be administered with O_2 in the resuscitation of subjects requiring and receiving artificial respiration.

Donald, K. W., et al., *Brit. M. J.* 4909: 313-317, 1955.

"Housewives'" Eczema

Low concentrations of hydrocortisone in an Acid Mantle Creme® appear to be effective in treatment of this type of subacute and chronic eczema

MARTIN L. GECHT, M.D.* and
LEONARD HOIT, M.D.*, *Chicago, Illinois*

One of the most common forms of eczema is that appearing on the hands of housewives, which results from defatting of the skin by soaps and detergents. Heredity, allergy and other factors have been cited as causes.

Fifty selected patients who had "housewives'" eczema were studied. These patients would most likely have responded favorably to local hydrocortisone therapy in concentrations of 1 to 1½%, as judged by previous results. However, we employed 0.5% hydrocortisone in an Acid Mantle Creme† for topical application four times daily. The patients were also instructed to avoid immersing the hands in water, whether or not it contained irritating agents, and to wear cotton gloves under rubber gloves for 15-minute periods only. Cool water was used to avoid heat penetration and accumulation of moisture under the gloves. Dishes were immersed in hot water to allow emulsification of debris, the washing completed after the water was cool. The irritating agents present in fruit, fruit juice, vegetables and raw meats were avoided by the use of canned and frozen foods, and the irritation from diaper washing by pre-rinsing the diapers. Contact with wool, such as knitting and bed-

*Department of Dermatology, Cook County Hospital, Chicago.

†Cort-Dome,® 0.5%, Dome Chemical Co., Inc., New York.

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making, was avoided. Cotton gloves were worn at all times, thus there was no need for frequent cleansing of the hands. When cleansing was necessary, a tepid boric acid solution was used. Occasionally, an emotional disturbance tended to aggravate the existing dermatosis and mild sedation was of benefit.

RESULTS

Of the 50 patients studied, 32 presented acute manifestations with erythema and vesiculation. Of these, 20 made an excellent response to therapy — diminution of erythema, scaling, vesiculation, oozing, pain and pruritus. The healing was progressive, and after three weeks of therapy, the eczema was controlled with ordinary preventive measures. The response to therapy was good in six patients, who showed a decrease in the erythema and scaling, although the eczematous process continued to be active after three weeks of therapy. Six patients showed some subjective improvement but few objective changes. Four of these were subsequently treated with 1 to 2½% hydrocortisone cream and three showed satisfactory response within 10 to 14 days, after which they were maintained on 0.5% hydrocortisone creme until the eczema healed.

The remaining 18 patients presented subacute or chronic changes such as erythema, scaling, lichenification, edema and mild pruritus. Among these, 11 showed excellent results after three weeks of therapy. It was certain that a number of the remaining seven patients had not followed the prescribed regimen.

SUMMARY AND CONCLUSIONS

1. Fifty patients having "housewives'" eczema were treated with the local application of 0.5% hydrocortisone creme and standard therapeutic measures.

2. The results were good to excellent in 37 cases. Three patients, who did not respond to therapy with 0.5% hydrocortisone creme, improved with higher concentrations and, after the acute phase had subsided, were maintained on the lower concentration.

3. The topical application of 0.5% hydrocortisone in a buffered creme (Cort-Dome®) and routine therapeutic measures, appears to be excellent management of housewives' eczema.

The Symptoms of Hiatus Hernia

In 54 of 70 consecutive cases in which a hiatus hernia was found this was the only detectable lesion. The symptoms in this group were epigastric pain, acid regurgitation, flatulence, vomiting and waterbrash. Postural aggravation was frequent. In none of the 70 did pain occur which could be confused with that of myocardial ischemia.

Leather, H. M., *Brit. M. J.*, 4945:934-937, 1955.

Management of Rheumatic Fever

These patients have relative adrenal cortical insufficiency; hormone therapy during an acute rheumatic attack will help to prevent damage to the heart

VINCENT C. KELLEY, M.D., Ph.D.*, *Salt Lake City, Utah*

Until the last few years, the physician was forced to rely upon prolonged periods of bedrest and such supportive measures as administration of oxygen, digitalis, and diuretics when indicated for symptomatic therapy for rheumatic fever. The physician also made an attempt to correct undesirable factors in the patient's ennvironment, improve his diet, and prevent or ameliorate the nearly inevitable psychologic difficulties encountered. All of these measures are now supplemental to more specific measures recently made available.

PREVENTION OF SECOND ATTACKS

Deaths from rheumatic fever seldom occur during the initial acute attack. In general, they occur in recurrent attacks or as late sequelae of the cardiac damage by rheumatic attacks. Therefore it is important to prevent recurrent attacks, and minimize the cardiac damage resulting from initial attacks. It is now possible to accomplish these aims; in addition, it even is possible to prevent a considerable proportion of initial attacks.

ETIOLOGY

The group A Beta-hemolytic streptococcus is the initiating agent of either first attacks or recurrences of rheumatic fever.[1] In unselected populations 3% of all individuals who contract streptococcal infections develop rheumatic fever as sequelae

* From the Department of Pediatrics, University of Utah College of Medicine.

1. Schwentker, F. F., *Rheumatic Fever*, University of Minnesota Press, Minneapolis, p. 17, 1952.

to these infections. Among patients who have had previous attacks of rheumatic fever, a much greater percentage (approximately 50%) of those who contract streptococcal infections develop rheumatic fever. It has now been demonstrated that rheumatic fever can be prevented, either by early treatment of streptococcal infections or by preventing such infections through the use of continuous prophylaxis with antibiotics or sulfonamids.

PREVENTION BY EARLY TREATMENT OF STREPTOCOCCAL INFECTIONS

Extensive studies of the use of different therapeutic regimens in groups of patients with streptococcal infections have produced clear-cut evidence that early treatment of streptococcal infections prevents rheumatic sequelae of these infections.[2] Of the several regimens which have been studied, the following are those recommended by the American Heart Association:[3]

1. Benzathine-penicillin G: a single intramuscular injection of 1,200,000 units (600,000 units in children).

2. Procaine penicillin with aluminum monostearate in oil: 3 intramuscular injections of 600,000 units (300,000 units in children) at 3 day intervals, or

3. 250,000 units oral penicillin three times each day for ten days.

The sulfonamides are not recommended for therapy of this type, since they are not effective in eradication of the streptococcus infection once it has become established. Antibiotics other than penicillin are to be used only in the cases of those individuals to whom penicillin cannot be administered for some valid reason.

PREVENTION BY CONTINUOUS PROPHYLAXIS

Even under optimal conditions, 40% of streptococcus infections are not clinically identifiable, so early treatment of streptococcus infection is not an ideal therapeutic approach. It is considerably safer in a rheumatic fever-susceptible population (e.g., patients who have had previous rheumatic attacks) to rely upon prevention of streptococcus infections rather than their early treatment. The American Heart Association recommends[3] that such individuals receive continuous prophylaxis according to one of the following schedules:

1. Sulfadiazine: 1 gr. per day (0.5 gr. per day for children weighing less than 60 pounds).

2. Oral penicillin: 200,000 to 250,000 units per day, or

3. Benzathine-penicillin G: 1,200,000 units intramuscularly once a month.

SUGGESTED REGIMEN FOR ANTI-STREPTOCOCCAL THERAPY AND PROPHYLAXIS

When a patient first is seen with an acute attack of rheumatic fever, the streptococcal infection should be eradicated by one of the therapy schedules stated in the preceding section; then he should be placed immediately on one of the prophylactic schedules and *maintained on this continuously*—not seasonally or intermittently—*for the duration of his life*. There is no acceptable alternative. Compromises with this regimen, resulting in inadequate antistreptococcal therapy and prophylaxis, are to be condemned. Obvi-

2. Catanzaro, F. J., et al., *Ann. Int. Med.*, 42: 345, 1955.
3. Jones, T. D., *Circulation*, 11: 317, 1955.

ously, *no patient should be placed on such an extensive and expensive program as this without an unequivocal diagnosis of rheumatic fever first having been made.*

Although a rheumatic attack is initiated by a streptococcal infection, eradication of the streptococcus does not terminate the activity of the rheumatic process. The latter may persist for weeks or months despite appropriate anti-streptococcal therapy. Nevertheless, such therapy should be instituted as soon as the diagnosis of rheumatic fever is made, since a continuing streptococcus infection may exert a deleterious effect on the patient's condition and may cause exacerbation of rheumatic activity, even before the patient's disease has become quiescent.

There seems little hope of completely eradicating streptococcus infections from the entire population or of successfully identifying and treating all such infections which do occur. Furthermore, although it has been demonstrated that continuous prophylaxis as outlined above potentially can eliminate, or nearly eliminate, recurrent attacks of rheumatic fever, we are far from attaining in practice the ideal of continuous anti-streptococcal prophylaxis for every patient who has had an attack of rheumatic fever. Thus, it may be expected that, for the predictable future, rheumatic fever will remain a common disease.

ADRENAL FUNCTION IN RHEUMATIC FEVER

During the past few years it has been demonstrated in our laboratory that patients with rheumatic fever have relative adrenal cortical insufficiency.[4] These patients are found to have consistently low circulating concentrations of 17-hydroxycorticosteroids—the principal hormones produced by the adrenal cortex—and to have greater than normal concentrations of ACTH in the blood. They do not excrete increased amounts of 17-hydroxycorticosteroids in their urine; and the rate of disappearance of intravenously administered hydrocortisone from their circulation is slower — rather than faster—than normal. Thus, in these patients, although the adrenal cortex is stimulated by greater than normal amounts of ACTH, it produces less than normal amounts of 17-hydroxycorticosteroids. This is interpreted as indicating adrenal insufficiency.

During the first few days of illness, rheumatic fever patients have elevated circulating concentrations of 17-hydroxycorticosteroids, although these elevations may not be as great as those in other patients with acute illnesses of equal severity. This suggests that the adrenals of these patients are capable of responding to potent stimulation by endogenous ACTH. Likewise, at any stage of their illness these patients respond to stimulation with large doses of exogenous ACTH (25 I.U. intramuscularly) by elevations of the circulating 17-hydroxycorticosteroid concentrations comparable to those which occur in normal individuals following the same stimulus. Because of this ability of rheumatic fever patients to respond to stimulation by either endogenous or exogenous ACTH, their adrenal insufficiency is considered to be only relative. The adrenal cortex is able to respond to stimulation, but the

4. Kelley, V. C., *Ann. New York Acad. Sc.*, 61: 369, 1955.

amount of stimulation required to evoke a response is increased.

The existence of adrenal insufficiency in patients with rheumatic fever provides rationale for cortisone therapy in the treatment of this disease. Because these patients have a relative rather than an absolute adrenal insufficiency, being capable of responding to ACTH stimulation, the use of ACTH therapy is as logical as the use of cortisone.

EFFECTIVENESS OF HORMONE THERAPY

Many controversial reports have appeared concerning the relative effectiveness of hormonal agents and of salicylates in rheumatic fever. While there is general agreement that hormones cause more or less prompt subsidence of the acute symptoms, the opinion that they do not alter the frequency of cardiac residua has been advanced repeatedly. This opinion has been based upon a limited variety of therapeutic regimens, very few of which have been individualized with regard to the size of the patient, the severity of the disease, or the response to therapy. There is little reason to believe that ACTH and cortisone, in contrast to nearly all other medications, can be used entirely empirically with no regard for the response of the condition under treatment.

At the outset of our studies, the basic premise was assumed that therapy should be individualized with respect to the factors mentioned. It would appear that the data obtained in these studies, which have been presented in detail elsewhere[5] and will be reviewed only briefly here, have justified this approach. The most important consideration, and the one most difficult to evaluate, is the effect of therapy on the cardiac damage resulting from the disease. In an attempt to obtain an objective evaluation of the effects of therapy on the residual cardiac status of the patient, a comparison was made of the incidence of residual cardiac murmurs in patients who were *known to have no murmur* before the onset of the attack. Of the many rheumatic fever patients treated, 80 could be included in this group. Of these, 46 were treated with either ACTH or cortisone and 34 with either salicylates or bed-rest alone. At the time of institution of therapy, all of the hormone-treated patients, and all but one of those not treated with hormones, had murmurs. At the time of discharge from the hospital, 52% of the hormone-treated patients, and 74% of those not treated with hormones, had murmurs. Thereafter, there was no significant change with time in the incidence of residual murmurs in the non-hormone-treated group; whereas in the hormone group the incidence of residual murmurs decreased with each successive examination until, at one year, only 16% had any residual murmur and at two and three years, respectively, only 8% and 6% had murmurs.

DETERMINING THE SIZE OF THE HORMONE DOSE

In an early stage of these studies, it was found that the minimum consistently effective initial dose of ACTH was one international unit per pound per day. On the basis of later studies, it was determined that one international unit ACTH was equivalent to 3 mg. cortisone with regard to clinical response and to the influence on circulating concentrations and urinary excretion of 17-hy-

5. Done, A. K. et. al., *J. Pediat.*, 15: 522, 1955.

droxycorticosteroids.[6] Therefore, a dose of 3 mg. cortisone (or one I.U. ACTH) per pound per day was taken as a standard minimum initial dose in our clinic for therapy of rheumatic fever.

DURATION OF THERAPY

Since there is considerable variability in the rapidity with which the rheumatic process subsides during hormone therapy, and since the clinical criteria of rheumatic activity disappear so rapidly under the influence of hormones, it is difficult to decide how long to continue therapy at the initial maximum dose level. In our experience, the erythrocyte sedimentation rate is not a satisfactory criterion by which to determine the time of tapering and discontinuance of hormone dose, since it becomes normal too soon after the initiation of therapy. If hormone therapy is discontinued at the time that the ESR becomes normal, the patient is likely to exhibit a "clinical rebound." We have found the serum mucoproteins to be a more reliable indicator of rheumatic activity. There is little hazard of "clinical rebound" if hormone therapy is continued in maximal doses until the serum mucoprotein concentration has decreased to less than 6 mg. %[7] and if tapering of dose then is carried out slowly and cautiously.

INDIVIDUALIZATION OF HORMONE THERAPY

At the present time, in our clinic, individualization of therapy is considered an integral and important part of hormone treatment of rheumatic fever. Such individualization is accomplished by:

1. Adjusting the size of the dose to the size of the patient—one I.U. ACTH or 3 mg. cortisone per pound of body weight per day as the minimum initial daily dose.
2. Adjusting the size of dose to the severity of illness—more severely or critically ill patients receive a larger initial daily dose.
3. Adjusting the duration of therapy according to the response of the patient.

Therapy with the full initial dose is continued until the following criteria have been met:

a. No clinical evidence of activity remains.
b. The erythrocyte sedimentation rate has been normal for at least one week.
c. The serum mucoprotein level has decreased at least to 6 mg. %.

When these criteria have been fulfilled, the dose is very gradually reduced in small steps at two to three day intervals. Before each reduction of dose the erythrocyte sedimentation rate is determined; if there is any evidence of an increasing ESR, the dose is not decreased further until this has disappeared. Since this policy has been adopted, we have seen no evidence of "clinical rebound" in any patient treated.

The regimen for hormone therapy described here is only one satisfactory approach. Other methods of heavy-dose hormone therapy with similar results have been published recently. It now seems probable that the cardiac damage resulting from an attack of rheumatic fever can be minimized by properly employed hormone therapy.

6. Ely, R. S. et al., *J. Pediat.*, 47: 576, 1955.
7. Kelley, V. C. et al., *J. Pediat.*, 12: 607, 1953.

SUMMARY

Rheumatic fever is initiated by infection with the streptococcus. Once the disease becomes established, its cardiac and other severe manifestations continue unabated although the streptococcus infection is eradicated.

Newer knowledge of rheumatic fever has provided the physician with three new approaches to therapy of this disease:

1. Early treatment of streptococcal infections to prevent rheumatic attacks.
2. Continuous phophylaxis, in patients who have had a preceding attack of rheumatic fever, to prevent recurrences.
3. Treatment of acute attacks of rheumatic fever with hormone therapy to minimize cardiac residua.

Discriminating use of these forms of therapy in addition to all formerly employed therapeutic measures should reduce greatly the morbidity and mortality due to rheumatic fever.

Dyspareunia

Treatment by explanation and reassurance, aided by the use of vaginal dilators introduced by the patient herself, is almost always successful. The author is impressed by the value of methyl-pentynol ("oblivon") 500 mg. taken 30 min. before intercourse and repeated on 4 or 5 occasions till confidence is established.

Lawrence, R. F., *Brit. M. J.* 4909:352, 1955.

Undescended Testicle

Placement results are improved if the surgery is done at the earliest possible age due to the fact that the blood vessels are longer in the younger child

WILLIAM B. KIESEWETTER, M.D., F.A.C.S.*, *Pittsburgh, Penna.*

This discussion is based on the author's experience as one of a group that saw and treated nearly 500 cases of undescended testicle. It has been well established that it is the increased warmth of the intra-abdominal position which does damage to a testicle which has not descended normally.

CAUSES AND TYPES OF NON-DESCENT

Failure of the testicles to descend in a normal fashion may be due to one of four possible causes:

1. Failure of the gubernaculum to shorten and thereby draw the testicle into the scrotal position.

2. The testicle may be prevented from descending by its adherence to the peritoneum or retroperitoneal structure; this would account for instances in which the testicles are still in the abdominal position.

3. Some endocrine dysfunction causes failure of descent.

4. The processus vaginalis fails to descend to the full extent, and the testicle is held at the furthermost point of descent of the processus, usually in the inguinal canal.

By "undescended" testicle is meant one which has failed to find its normal lodgment in the scrotum and which cannot be brought there by careful physical examination and traction. The "retracted" testicle has

* From Surgical Clinic of Children's Hospital of Pittsburgh and Department of Surgery, School of Medicine, University of Pittsburgh.

descended normally, but because of a hyperactive cremasteric reflex, it can be drawn back up into the inguinal canal so as to simulate a true cryptorchoid testicle.

In our series the cases fall into five categories:

1. Absence of the testicles, 5%.
2. Abdominal testicle, 10%.
3. Inguinal undescended testicle, 72%.
4. Testicle high in the scrotum, 10%.
5. The testicle descended through the external ring but found lodgment in an aberrant position such as the perineal or pubic fat areas, 3%.

ADVICE TO PARENTS

Studies on bilateral cryptorchidism have shown that the fertility rate is at best 10% if the condition is untreated, or if the testicles are not brought down until after puberty. This is a matter of primary importance to the family and will certainly influence the doctor in giving advice relative to the handling of their child's lesion. Also, up to the age of five, there is little evidence that the cryptorchid testicle is in any way damaged by its abnormal position, but after five, this position seems to have a real detrimental effect on it.

There are psychological problems. Such boys are apt to suffer a sense of inferiority. To some children this presents no problem, but to the majority of boys its effect may even cause them to withdraw from normal social contact and become seclusive and introverted.

Finally, the incidence of carcinomatous change in an undescended testicle is some 15 to 50 times greater than in one normally positioned. However carcinoma of the testicle is a rare neoplasm and this possibility should not be used as a threat to force surgery upon the cryptorchid patient.

CONTROVERSIAL ASPECTS OF CRYPTORCHIDISM

Spontaneous descent of the testicle after birth is held by some to be likely. Certainly it is too rare an occurrence to be used as an argument for delaying surgical correction until after puberty.

The question "Is non-descent of testicles linked with the fact that these testicles are imperfect histologically?" may be answered in the course of time, as the number of clinical histories and histological examinations multiply.

As to influence of endocrine products: A course of anterior pituitary-like hormones is standard advice to families facing the cryptorchid problem. This failing, the child is sent to a surgeon for advice. Those who espouse the efficacy of hormones admit that they work by developing the size of the scrotum and of the testicle; this combination causing the descent. Reliable data on the efficacy of hormones is not available. Since some fear detrimental effects of endocrines upon the testicle, it would seem wise to weigh possible ill effects against possible good effects.

The results of testicular surgery in the pre-school child have persuaded pediatricians and general practitioners to wait until pre-puberty before undertaking orchidopexy. Our review of 205 orchidopexies (most of them done under the age of four) revealed only three partially atrophic testicles that were not atrophic at the time of the surgical procedure. Careful surgery

in the hands of experienced men should produce results that will not be compromised by the dangers of the surgical procedure itself.

TECHNIQUE OF OPERATION

The hernial sac is freed from the cord structures and the cord structures dissected retro-peritoneally as far as is necessary to get adequate length to place the testicle at the bottom of the scrotum. On occasion, we have found it necessary to divide the deep epigastric vessels to allow the spermatic cord to drop in a straight line to the scrotum, without going around through the internal ring. A traction suture is put through the body of the testicle, brought out through a stab wound in the scrotum, and attached to a rubber band which is, in turn, taped to the thigh. It is removed at the end of seven days.

The results of any technique depend upon four conditions:

1. The histology of the testicle at operation.
2. The length of the vascular supply.
3. The length of the vas deferens.
4. Adequacy of the scrotal cavity.

In our experience, the earlier surgery is performed (pre-school as opposed to pre-pubertal), the better the condition of the testicle at the time of surgery and after puberty. The principal limiting factor in the placement of the testicles in the scrotum is the length of the blood vessels. The earlier surgery is done, the less frequently does one find the vessels too short. Very rarely a short vas deferens limits the placement of the testicle in the scrotum. Finally, the scrotal cavity must be well developed at the time of surgery and the testicle, itself, must be placed next to the skin of the scrotum.

CONCLUSIONS

We consider the following as indications for the surgical correction of an undescended testicle:

1. An associated, symptomatic hernia makes the undescended testicle a surgical problem.
2. Unilateral undescended testicle is a surgical problem, since hormones sufficient to bring one testicle down before birth should have sufficed to bring the other testicle down.
3. Cases of bilateral testicular nondescent that have been studied and treated from an endocrine standpoint, without resultant descent of the testicle, should be given the benefit of early surgery because of the lowered fertility without it.

In utilizing these indications, we have employed a modified Bevan technique in all cases and have done it as early as we see the cases —under two years of age where possible.

DRAMAMINE® IN VERTIGO

Notes on the Diagnosis and Management of "Dizziness"

II. False Dizziness

1. Romberg's Sign

The patient stands with his feet together and his eyes closed. Inability to maintain equilibrium may indicate locomotor ataxia or sclerosis of the posterior columns of the spinal cord (tabes dorsalis).

False dizziness is a sensation of sinking or lightheadedness which is often of psychogenic origin. It should be distinguished from true "dizziness" or vertigo[1] in which there is a definite whirling, moving sensation.

Unsteadiness, lightheadedness and similar manifestations of false dizziness[2] may be psychogenic or the result of arteriosclerosis, hypoglycemia, drug sensitivity and general metabolic disturbances such as anemia and malnutrition. Hypertension is often the cause of these symptoms.

Psychogenic dizziness probably originates at the highest brain centers. It may be described as a sense of uncertainty with occasional mild lurching but not to the point of falling. In these patients there is no nausea, no disturbance of vestibular pathways and otologic and neurologic examinations are negative. The sensation is unaffected by head movement. Symptoms usually disappear[3] with rest.

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Dramamine is also a standard for the management of motion

2. Inability to Walk a Straight Line

sickness and is useful for relief of the nausea and vomiting of fenestration procedures and radiation sickness and for relief of "true dizziness" of other disorders.

Dramamine (brand of dimenhydrinate) is supplied in tablets (50 mg.) and liquid (12.5 mg. in each 4 cc.). G. D. Searle & Co. Research in the Service of Medicine.

3. Inability to Stand on One Foot

A patient's inability to stand on one foot without lurching may be a helpful test in distinguishing between "dizziness" which is purely psychogenic and that which is of organic origin.

1. Swartout, R., III, and Gunther, K.: "Dizziness:" Vertigo and Syncope, GP *8*:35 (Nov.) 1953.
2. DeWeese, D. D.: Symposium: Medical Management of Dizziness. The Importance of Accurate Diagnosis, Tr. Am. Acad. Ophth. *58*:694 (Sept.-Oct.) 1954.
3. Kunkle, E. C.: Central Causes of Vertigo, J. South Carolina M. A. *50*:161 (June) 1954.

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Anaphylactic Penicillin Reactions

A good history and skin tests should detect most potential reactors; the sensitized state will persist for months or years

GUSTAVUS A. PETERS, M.D., et al, *Rochester, Minnesota*

During the past ten years, while larger doses and repeated courses of penicillin have been used, increasing numbers of sensitivity reactions have been reported. Urticaria has been one of the commonest reactions, and in many cases there is a fairly complete picture of serum sickness. "Id" reactions are another important group. Skin tests have been undependable. With rare exceptions, patients have recovered from these reactions, although many are plagued with hives for years, and a few have died of illnesses characteristic of periarteritis nodosa.

NEW TYPE OF REACTION

Gradually emerging, especially during the last five years, has been another type of reaction of even more serious import—the immediate anaphylactic reaction which may end fatally in a few minutes following a dose of penicillin. The patient suddenly becomes apprehensive, dyspneic and very weak, the pulse is rapid, cyanotic, and then unconsciousness. The procaine radical is seldom thought to be at fault. One patient was lost because the procaine was thought responsible for a previous reaction, and re-administration of penicillin produced fatal results.

A good history and skin tests should detect most potential reactors. The direct test can be made by

scratching the skin and applying a drop of sol. of 10,000 to 20,000 units of penicillin per cc. If the reaction is positive, an erythematous flare develops after 15 to 20 minutes, often with a certain wheal. If the reaction is doubtful, 0.02 cc. of the solution can be given intradermally, but intradermal testing should not be done first. Further doses, no more than a few days apart, will not be apt to result in anaphylaxis. However, there is no way of telling when a patient is going to become penicillin-sensitive.

If the patient has not recently received penicillin, he should be asked if he has ever had ill effects after a penicillin injection; also whether he has hay fever or asthma, or has received heavy doses of penicillin over a long period. If he has had any serious reaction attributable to penicillin, some other antibiotic should be given. It is questionable whether atopic patients show a higher incidence of reactions, but if such occur, they tend to be more severe. Therefore, the likelihood of sensitization to penicillin, as with other allergens, seems increased with prolonged high doses, especially of penicillin in wax or oil. The sensitized state persists for months or years.

RULES OF CHOICE

If the skin test is positive, the patient should not be given penicillin. If the history and skin tests are doubtful, and penicillin is the drug of choice, it may be given with adequate precautions, but it would be safest to use another antibiotic.

Epinephrine should be at hand for immediate use in every office or hospital room where penicillin is given. A tourniquet, oxygen and intravenous equipment for giving intravenous antihistamine drugs and aminophylline should be available. Prior preparation with antihistaminic or ephedrine compounds cannot be depended on, nor penicillin O or penicillin V.

It is preferable that the first of a series of penicillin injections be made in the upper arm where a tourniquet can be applied proximally if the reaction occurs.

Measures must be instituted in a matter of seconds; 0.5 cc. of 1:1,000 epinephrine into the site of the penicillin injection and 0.5 cc. into the other arm, *repeated if necessary.* Oxygen should be given and an intravenous infusion started before vascular collapse occurs. Five cc. of 1:1,000 arterenol in 500 cc. of glucose solution will help maintain the blood pressure, while corticotropin or cortisone may help if the critical shock period is survived. If the patient is responsive, 3/8 grain of ephedrine may be given orally.

The patient should be observed closely for several hours. Usually weakness and shakiness are the only residual effects, disappearing by the next day. The patient should be told the dangers that penicillin holds for him. Some doctors have supplied such patients with a metal tag to be worn where it will be noticed, warning against the use of penicillin.

Proc. Staff Meet. Mayo Clinic, 30:634-639, 1955.

The Treatment of Angina Pectoris with A Nitroglycerin Ointment

Slower absorption of this ointment through the skin promotes an increased and prolonged vasodilating effect

JAMES A. DAVIS, M.D. and BERT H. WIESEL, M.D.,
Birmingham, Alabama

The authors report a study in which 76% of a group of coronary insufficiency patients showed improvement when Nitrol® ointment (a 2% nitroglycerin ointment in a lanolin-petrolatum base) was used to promote coronary vasodilation and prevent attacks of angina pectoris.

"Angina pectoris by well established definition consists of a particular type of pain due to temporary discrepancy between oxygen supply and oxygen need of the heart." Treatment of the acute attack has involved the use of fast acting nitrites, nitroglycerin and amyl nitrite, plus the prevention of attacks by the avoidance of physical and emotional strain, overeating and obesity. Rapid-acting nitrites, such as nitroglycerin in tablet form for sublingual use, are limited in their efficacy by short duration of effect and the longer acting nitrites such as erythritol-tetranitrate and mannitol-hexanitrate have long been a part of prophylactic therapy. "These latter have undesirable side effects in many patients and are often ineffective . . ." Results are difficult to evaluate and no one drug can be

regarded as the solution to the problem.

The treatment of a patient with coronary insufficiency is described. A regimen employing 15 to 20 nitroglycerin tablets a day, long acting nitrites and opiates in large doses failed to bring adequate relief and some further method of securing vasodilation of the coronaries was required. Nitrol ointment* was applied to the skin. It was hoped that the slowed absorption through the skin might result in the superior vasodilating effect of the nitroglycerin being prolonged in relation to the coronary circulation. "The results in this case were dramatic and convincing enough to have impelled us to employ it in the management of subsequent problem cases of coronary insufficiency with angina pectoris since that time."

A series of seventeen patients with angina pectoris were treated with Nitrol ointment in addition to the usual measures. "Nine of these patients showed a decrease in the number of attacks; four patients had no apparent decrease in the number of attacks but had a general feeling of well being; four patients showed no response. This measure is suggested as an adjuvant in the management of coronary insufficiency." Since there is a marked vasodilating effect, medication should be withdrawn slowly to prevent the induction of acute coronary insufficiency.

*Nitrol® Kremers-Urban Co., Milwaukee, Wis.

Davis, J. & Wiesel, B., *Am. J. M. Sc.*, 230:3, 1955.

Adrenocortical Insufficiency in Infants

Diagnostic procedures, antishock measures for control of crises, and effective steroids are suggested for establishment of a maintenance regimen

THEODORE C. PANOS, M.D., *Galveston, Texas*

Early recognition of this disease is of paramount importance. It may be difficult. The salient features of 16 such cases were:

1. Onset in the first week of life.
2. Persistent dehydration.
3. Failure to gain.
4. Early vomiting, frequently projectile.
5. Polydipsia and polyuria.
6. Occasionally diarrhea.
7. Late development of anorexia and listlessness—harbingers of crisis.

Positive diagnosis is most frequently made by the demonstration of the serum of decreased sodium and chloride, and increased potassium.

INFLUENCE OF ACUTE INFECTIONS

Adrenocortical crisis is most commonly precipitated by acute infections, but it may also result from trauma, e.g., circumcision, and certain drugs. In patients under treatment, it may be caused by premature reduction in dosage or withdrawal of NaCl or desoxycorticosterone acetate (DOCA), especially the former. The sequence of events in the development of crisis seems to be as follows:

Excessive loss of Na and Cl in the urine, loss of water into intracellular space to compensate for hypotonicity due to extracellular electrolyte loss. Reduced absorption of Na, Cl and water from the gastrointestinal

tract. Constriction of plasma volume with the production of shock and azotemia.

Rise of the serum K level contributes, and this is due to increased retention as a result of adrenocortical insufficiency and to concentration as a result of constriction of plasma volume. In fulminating cases, crisis may occur in the absence of serum electrolyte changes.

ACUTE CRISIS

Emergency measures are required to manage the acute crisis. Blood is ideal to overcome shock and restore renal function at a rate of 5 ml. per minute to a total of 20 to 30 ml. per Kg. of body weight. Plasma is a good substitute for blood, and 6% Dextran in saline is used. Normal saline is always available and effectively complements blood. It is usually the first substance to be infused, given in amount and at rate similar to that for blood and followed by blood. The intravenous or intramuscular administration of norepinephrine (Levophed) or phenylephrine HCl (Neosynephrine) may be advisable. External warmth and oxygen inhalation should be routine. Handle as little as possible, and give no sedatives or narcotics.

Along with these antishock measures, whole aqueous adrenal cortical extract (ACE) should be given in large amounts. Schedule suggested:

a. 3-5 ml/Kg. of body weight intravenously as a "Stat." dose; then

b. 1-2 ml/Kg. intravenously every half hour until distinctly much improved; then

c. 1 ml/Kg. intramuscularly for at least 48 hours; then

d. Gradual diminution of dosage as maintenance therapy is instituted.

The most important single medication is NaCl—indispensable. The amount required by infants is very high. Daily supplement of at least 3 gm. is usually necessary, at times 5 to 6 gm. daily is added to formula or administered in 1 gm. by teaspoon. Once an effective dose has been ascertained, it should be continued at this level.

DOCA should be begun as soon as the crisis is over—1 to 3 mg. daily in injectable form. Observe patient carefully for excessive weight gain, edema, hypertension and cardiac damage or failure. In hypokaliemia 1 gm. of KCl is adequate with repeated determinations of serum chloride and ECG guiding therapy. Hypertension may occur and persist for several weeks after DOCA is discontinued. Control is satisfactory in the vast majority. After prolonged periods of maintainance with combined medication, many infants can get along, but chronic maintenance always should be with DOCA and/or cortisone, in addition to the salt.

STEROIDS

Cortisone or hydrocortisone, in small doses, probably should be used in all cases. Adequacy of a maintenance regimen should be evaluated repeatedly by:

1. Steady weight gain without edema.

2. Cessation of vomiting and diarrhea, sense of well-being and alertness.

3. Maintenance of normal serum electrolytes, blood pressure and ECG.

When signs of overdosage appear, reduce the DOCA first, then the salt *very cautiously*, at all times assuring adequate intake of K.

The maintenance regimen must not be changed for two to three months, then gradually to determine whether to implant pellets or to use desoxycorticosterone trimethylacetate, an effective long-acting preparation which can be injected at monthly intervals. Addition of small amounts of cortisone, if not already in use, may reduce the need for, or serve as a substitute for DOCA.

Reinforcement of maintenance regimen with ACE and/or cortisone should be carried out during intercurrent infection, trauma or any episode of diarrhea or vomiting. Continuous prophylactic administration of an antimicrobial preparation is advisable in all cases of adrenocortical insufficiency.

Texas State J. Med., 52:9-12, 1956.

Legging For Lower Extremity Skin Traction

A simple one piece traction legging of foam rubber and elastic corset material with attached straps and buckles has been devised. It can be applied by the patients with a minimum of instruction and negligible risk. This traction legging has been used over a period of five years on 1,000 patients, both at home and in the hospital, with satisfactory results. In no instance have serious skin, nerve or vascular complications been observed, although 90% of the tractions were applied by patients or by unskilled hospital aides.

The legging has been modified on several occasion eliminating faults. Three sizes now cover the range of leg sizes adequately.

Anderson, C. E., et al., *J.A.M.A.*, 160:1315-1316, 1956.

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Treatment of Hypercholesteremia

The effect of fatty acids on blood cholestrol levels and on developement of sclerotic changes in arteries constitutes an important field for future work

HAQVIN MALMROS, M.D., and GERHARD WIGAND, M.D.,
Lund, Sweden

The frequency with which severe hypercholesteremia is associated with atherosclerosis in the young argues for a causal relationship. Many attempts have been made to control hypercholesteremia. Several therapeutic methods, based on more or less scientific grounds, have been described. Most of these methods have failed to produce reliable results. More than one factor is capable of causing hypercholesteremia, therefore we can hardly expect to find a treatment that will give relief in all cases.

The type regularly seen in untreated myxedema is most apt to be due to deficiency of the thyroid hormone. Administration of desiccated thyroid in sufficient dosage will bring the serum cholesterol to normal within a few weeks. There is a danger in suddenly increasing the metabolism of myxedematous patients who have had angina pectoris or other cardiac symptoms. Therefore, start with a very small dose. These fatal cases also warn that care must be used in giving desiccated thyroid in the management of hypercholesteremia in association with other diseases in which the basal metabolism is not decreased, such as in essential familial hypercholesteremia. This is especially important if the patient has had myo-

cardial infarction or angina pectoris. Moreover, in these cases, thyroid compounds do not produce a very impressive effect on the hypercholesteremia.

FAMILIAL HYPERCHOLESTEREMIA

Hypercholesteremia is fairly common in diabetes, especially in uncontrolled cases with severe ketosis. Adequate treatment of these cases is obtained by the control of the disorder of the carbohydrate and fat metabolism by insulin in sufficient doses. In some cases of diabetes, hypercholesteremia persists despite "adequate" insulin. In these cases, the hypercholesteremia might have nothing to do with the diabetes but may possibly be familial.

Essential familial hypercholesteremia is a common disease. Examination of the serum cholesterol level will often show an increase in all patients seen because of cardiac infarction or angina pectoris. In all those cases with a cholesterol value of more than 300, examination of all the brothers and sisters and other near relatives for serum cholesterol often detects distinct hypercholesteremia in one family member after the other—many of them symptomless, many with tendon xanthomata, xanthelasma and arcus corneae.

The prognosis of familial hypercholesteremia is very serious because of the regular occurrence of atherosclerosis of the coronary arteries. The treatment of these cases has been discouraging. Barr and others have shown that the administration of estrogens can modify the abnormal lipid spectrum. However, when administered in large doses to men, the female sex hormone produces such troublesome side effects that the method is not used routinely.

Moderate restriction of the fat intake will not produce any impressive effect. A nearly fat-free diet can reduce blood cholesterol considerably. It is difficult to live on such a diet for any length of time, and such a dietary regimen might involve certain risks.

VEGETABLE FAT DIETS

Whether vegetable fat has the same effect on the serum cholesterol level as animal fat is variously answered. Kinsell's series included one case of familial hypercholesteremia in which the total cholesterol decreased from 420 mg. to 260 mg./100 ml. in the course of the experiment, which lasted 30 days. We have tried, in some cases of hypercholesteremia, vegetable fat in the form of artificial milk consisting of corn oil and fat-free milk powder, cheese prepared from corn oil, skim-milk and fat-free milk powder, and ice cream, likewise made of corn oil, milk proteins and sugar. The patients also received bread, cereals, fruits, vegetables, potatoes, rice, spaghetti and sugar ad libitum up to calorie requirements. Adequate amounts of iron and vitamins were given.

In the beginning of our experiments, some of the patients also receive margarine made from coconut oil and rape oil, with no animal fat. We tried this vegetable fat diet on different types of hypercholesteremia and also on some cases with normal serum cholesterol. The commencement of the vegetable fat diet was regularly followed by a distinct fall in the serum cholesterol.

Of special interest are eight cases of hypercholesteremia of the essen-

Summer Therapy in PSORIASIS

The eruptions of psoriasis may disappear the summer, to reappear in the winter ladden[1]). According to Morris[2], "the best urity against relapse is the completest pos- le removal of all remnants of the disease."

To avoid recurrence in the fall, psoriasis uld be treated intensively with RIASOL summer. Treatment should be continued il every patch, papule, scale and "bleed- point" has been eradicated.

Permanent results with RIASOL may be ured when it is used conscientiously during declining phase of psoriasis. Many phy- ians have reported freedom from relapses ing years after a course of RIASOL treat- nt.

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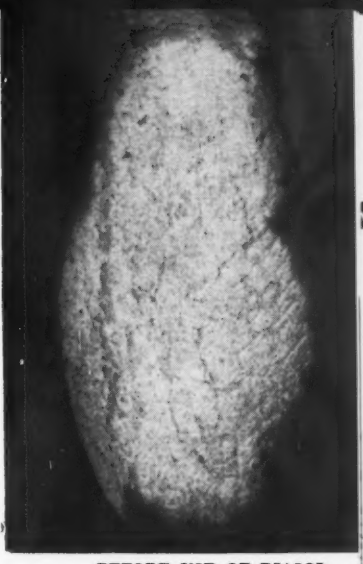
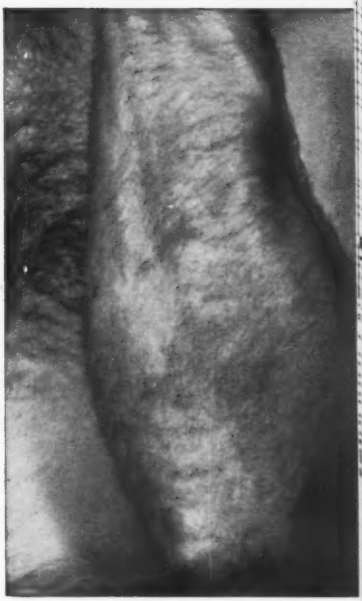
Apply daily after a mild soap bath and rough drying. A thin, invisible, economi- l film suffices. No bandages required. After week, adjust to patient's progress.

RIASOL is supplied in 4 and 8 fld. oz. tles at pharmacies or direct.

nnesota Med. 22:381, 1939.
t. M. J. 2:1328, 1954.



BEFORE USE OF RIASOL



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RIASOL for PSORIASIS

tial, familial type, as such cases do not respond well to other therapy. Four of them belonged to the same family; two had tendon xanthomata, six had angina pectoris and, of these, four had had myocardial infarction. The cholesterol fell abruptly when animal fat was replaced by vegetable fat. Most of the patients have been on the diet for no more than a few weeks. Since serum cholesterol often increases after a temporary decrease, the trial will be continued for a long time.

One of the patients had fairly severe gastric distress during the test period. It turned out that he had a peptic ulcer. When placed on the modified ulcer diet, the cholesterol gradually rose to the previous level. In some cases when vegetable margarine was added to the diet, or when it was used instead of corn oil, the serum cholesterol increased. For that reason we have recently removed margarine from the diet and use nothing but corn oil.

The favorable results obtained with corn oil might be due to the abundance of essential fatty acids in this kind of fat; 57% of corn oil is linoleic acid.

Minnesota Med., 38:864-870, 1955.

Amebiasis

It is estimated that 20% of the people of the United States have amebiasis; that would mean more than 30,000,000 persons. Only 5,000 cases a year are reported. The prevalence of amebiasis may reach as high as 80 or 90% in some regions. Its frequency is less dependent on geographical distribution than on the level of sanitation in a given locality.

Most hosts to *E. histolytica* seem to have some symptoms ascribable to its presence. *E. histolytica* may cause distant metastatic lesions or abscesses of various kinds.

A program of therapy scrupulously followed, with avoidance of reinfection, will control nearly all cases of amebiasis. Dwork, in reviewing the problem of recent therapy of amebiasis, concluded that the drugs of choice at this time are fumagillin, terramycin, aureomycin, milibis, diodoquin, and vioform. Any program that includes the carefuly planned combination of emetine, an arsenical and an iodide will probably give as good as or better results than all the newer forms of therapy.

In order to diagnose 90% of the cases, a technician or physician should spend two years under competent instructions and during that time examine 30 to 40 stools a day. Examination of the stools for *E. histolytica* is the job of an expert. Then, if doubt remains and symptoms point to amebiasis, a therapeutic test may be justifiable.

Bargen, J. A., *Minnesota Med.*, 39:69-75, 1956.

Adrenocorticosteroids

Cortisone, however early it is given, only suppresses the symptoms of rheumatoid arthritis and does not affect the course of the disease in its initial stages to any greater extent than does aspirin. There are certain patients with rheumatoid arthritis to whom relief from symptoms means the difference between being able to live a fairly normal social life or a distressingly crippled state in which work, recreation or even self-care is more or less impossible. For such patients, the hazards of prolonged high-dosage cortisone treatment may be preferable to the severely handicapped existence that is the only alternative. On the other hand, there are many patients with inflammation of the eye, minor rheumatic disorders or common diseases of the skin, for whom it is justifiable to prescribe short courses of treatment with these substances by local application at a low-dosage level, e.g. in the form of injections or ointments.

Foreign Letters (United Kingdom) *J.A.M.A.*, 160:8, 1956.

Management of Essential Hypertension

If patients with essential hypertension are followed with careful appraisal at intervals of 9 to 12 months, it is safe to withhold treatment until they have distressing symptoms or show signs of vascular deterioration.

In the absence of signs of the malignant syndrome, the simplest treatment should be tried first, with progression to more complicated and dangerous agents only if they become necessary for control of blood pressure.

Elixir of sodium thiocyanate with equal parts of elixir of phenobarbital, 4 ml. 3 or 4 i.d., in the presence of adequate renal function, will produce serum levels of 3 to 6 mg. per 100 ml. These concentrations control hypertensive headache in 80% of patients and reduce the blood pressure in 25% to 30%.

Derivatives of Rauwolfia serpentina are sometimes dramatically effective in patients with severe hypertensive disease.

Ganglion-blocking agents should be used in only those patients who can accept responsibility for measuring their own blood pressure and regulate the dosage. Dosage must be adequate to maintain standing blood pressure near 120/80.

Low-sodium diets are not palatable and are tedious. Also, their adequacy must be established by weekly measurement for 24-hour urinary sodium. Daily intake of sodium should be less than 500 mg. This treatment is effective in 25% of patients.

Sympathectomy has as its major limitation our inability to select good responders before operation. It is dramatically effective in 10% to 12% and of value in 40% to 50% more patients.

The malignant syndrome should be treated with low-sodium diet and ganglion-blocking agents. Simultaneously, less complicated treatment is begun for long-term management after signs of necrotizing arteriolitis are controlled.

Taylor, R. D., *Wisconsin M. J.*, 55:162-165, 1956.

Control of Postoperative Nausea and Vomiting With Meclizine

The standard pre-operative dose was 50 mg. of meclizine the evening before operation, followed by 25 mg. two hours before operation. All patients received 75 mg. for three days after surgery, in three daily doses. The control patients received placebo tablets according to the same regimen.

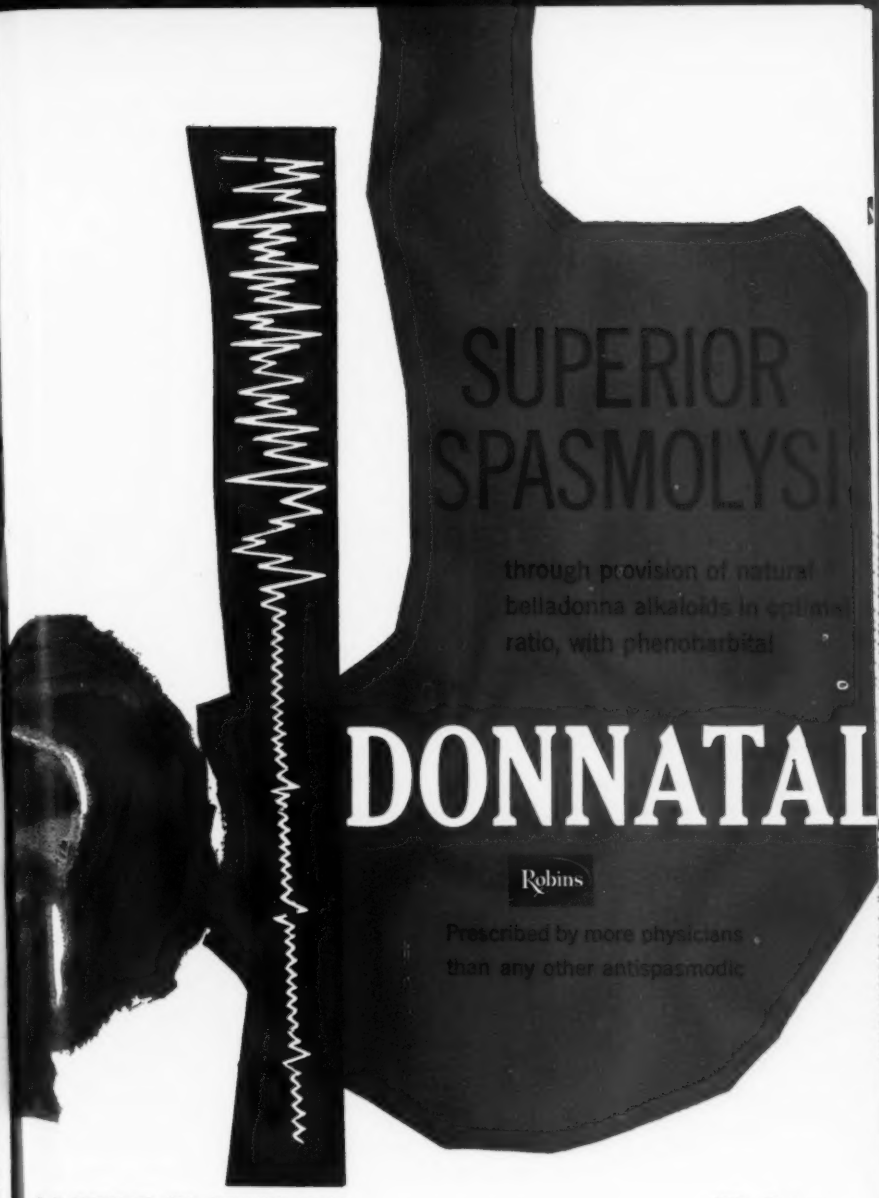
Meclizine (Bonamine) is a suppressor of the vomiting reflex and of symptoms of nausea in patients recovering from surgery under general anesthesia.

A controlled study was made on 144 patients given Bonamine or placebo by the double-blind technic. A variety of surgical and general anesthetic procedures was sampled.

The incidence of postoperative nausea and vomiting in the control cases was 46%; in patients given Bonamine, 24%.

It is concluded that Bonamine is a suppressor of postoperative nausea and vomiting. It has a potential use in contributing to the comfort and clinical well-being of patients recovering from surgical operations requiring general anesthesia.

Kinney, J. J., *J. M. Soc. New Jersey*, 53:128-132, 1956.



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Intermediate Coronary Syndrome

The clinical picture is that of acute coronary artery disease, midway between that of angina on the one hand and acute myocardial infarction on the other. It is caused by prolonged acute coronary insufficiency. It results in moderate myocardial injury, which may be reversible. The pain is usually distinguishable from angina in that the precipitating factor is not obvious, the duration is longer, and it is not abolished by rest and nitroglycerin. Other evidences of myocardial damage are evolutionary changes in the ST segments and T waves, which are usually reversible.

The acute coronary episode in the intermediate coronary syndrome may be an acute ischemic process. The high incidence of involvement of the anterior wall of the left ventricle is due to more frequent arteriosclerotic narrowing of the vessels supplying that area.

Davidson, S., et al, *J. Florida M. A.*, 42:640-642, 1956.

Fatal Postural Hypotension

Postural hypotension is commonly encountered in general medical practice as a benign condition whose worst effect is transient syncope.

A woman, 48 years of age, was admitted for bilateral cervical chordotomy to relieve intractable pain in the abdomen, back and left lower extremity, caused by metastatic carcinoma of cervix. Two years earlier she had had a radical mastectomy for carcinoma. She was receiving morphine every 2 hours during the two days prior to surgery. She was thin and pale; hemoglobin 9.7 gm., reds 3,800,000, blood presure, 110/70; no evidence of heart disease.

She received Demerol, 100 mg., and scopolamine, 0.6 mg., subcutaneously 35 minutes before anesthesia. She was placed in the sitting position in a special operating chair. Anesthesia was induced with 5% thiopental sodium; a total of 300 mg. in two doses, with 40 mg. succinylcholine, was given for endotracheal intubation. Immediately ventilated with 100% oxygen; blood pressure was found to be 80/60, pulse 110. Because of marked pallor, hypotension, and weak, thready pulse, the operation was postponed. *After 35 minutes,* she was placed supine and taken to the recovery room, breathing spontaneously, assisted by the anesthesiologist. Within two or three minutes of arrival, she was pulseless and apneic, blood pressure zero, and the pupils were widely dilated. The surgeon thumped the chest over the precordium vigorously and injected 1 cc. epinephrine 1:1,000 into the heart, while the anesthesiologist administered artificial respiration by manual compression of the bag. Blood pressure immediately rose to 200/120, pulse 140; spontaneous respiration returned after 15 minutes. She was given 500 cc. of whole blood and returned to her room. The vital signs were satisfactory, but she was comatose. She never regained consciousness and expired with a terminal fever of 105 F. on the sixth day.

Postmortem revealed no evidence of cerebral thrombosis or gross brain disease. There was early bronchopneumonia and metastatic carcinoma in the retroperitoneal and periaortic lymph nodes.

The patient died as a result of irreversible cerebral hypoxia, precipitated by arterial hypotension in a patient already hypoxic as a result of

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Riboflavin (B_2)	2.5 mg.
Niacinamide	25 mg.
Pyridoxine (B_6)	0.5 mg.
Folic Acid	0.375 mg.
Calcium Pantothenate	5 mg.
Vitamin K (Menadione)	0.5 mg.
Vitamin B_{12}	1 mcgm.

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anemia and hypovolemia.

The capacity to tolerate an upright position, especially when arterial hypotension is to be expected or desired, depends largely on the presence of adequate blood volume and hemoglobin.

When the sitting position is mandatory for anesthesia and/or operation, the blood volume and hemoglobin concentration should be corrected to normal. The patient's safety requires vigilant observation of arterial blood pressure, prompt use of vasopressor medication (preferably by dilute intravenous infusion in the poor-risk patient), elevation of the legs to a level as high as is compatible with the surgical position, and, if necessary, the use of elastic bandages making compression of 30 mg. Hg.

New York State J. Med., 56:915-916, 1956.

Chloroethylamine Treatment of Hodgkin's Disease

Among the aliphatic chloroethylamines, Novoembichin, with a milder side-effect upon the gastrointestinal tract and a weaker action on the bone marrow than other compounds of the series, is the most suitable drug for the treatment of Hodgkin's disease.

The prolonged method of treatment with thrice-weekly injections has been found most suitable. Usually 8 to 16 injections are necessary. Injections are continued until the leucocyte count falls to 2,500-3,000. If this fails to produce complete regression of lymphnodes, an additional course of treatment is given six weeks later. To prevent relapses, a supplementary (prophylactic) course of injections of shorter duration, after an interval of two to three months, has been found useful.

With such treatment, given in the early stages and by a rational method, preservation of life and working capacity for more than five years from the beginning of treatment may be obtained in 50% of cases.

Chloroethylamine and x-ray therapy are applicable in combination.

The new drug can be administered orally and has only a slight toxic action on the gastrointestinal tract and is more convenient for the patient, one tablet being given twice weekly for three to five weeks.

Larionov, L. F., *Brit. M. J.*, 4961:252-256, 1955.

Treatment of Insomnia With Valmid

Unless the causes of insomnia are recognized and successfully treated, a moderately long-acting drug such as amytal sodium is required. No drug can be given in doses which will maintain sound sleep throughout the night and still permit a refreshed awakening in the morning.

Valmid, 0.5 to 1 gm., is usually effective for insomnia. A few require doses of 1.0 to 2.0 gm. It has all the advantages and all the limitations of a short-acting, orally administered sedative. It must not be expected to produce prolonged rest in patients under severe stress or exposed to frequent disturbances. It will produce restful sleep in persons with mild or moderate anxiety. Persons who awaken early in the morning may take the full sedative dose four hours before the expected time of awakening. It is, therefore, especially of value in elderly patients or working persons who tend to awaken early and cannot get back to sleep.

Gruber, Jr., C. M., *J. Indiana M. A.*, 49:35-37, 1956.

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1. Levy, S., *J.A.M.A.*, 153:1260, 1953.
2. Thompson, L., Procter, R., *North Carolina M. J.*, 15:596, 1954.

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Chlorpromazine and Rauwolfia Serpentina in Psychiatric Cases

This study covers the action of chlorpromazine and reserpine and the results obtained in a psychiatric department acting primarily as an observation ward and a center for early treatment. A large number of the patients were psychotic. The action of these drugs (mostly chlorpromazine) proved to be most helpful in almost every case of psychomotor excitement of any type. The tranquilizing effect of both drugs (mostly reserpine) was noted in the treatment of chronic anxiety reaction and emotional tension accompanying schizophrenic, depressive and other psychiatric reactions. In the disturbed patient, they provide relaxation which will permit psychotherapy.

No curative effect of these drugs was observed, except in cases of mania where the episode was shortened, and the clinical recovery was maintained. In such cases, the prompt use of chlorpromazine may prevent the recurrence of an attack.

Chlorpromazine, given in small doses, will have an antiparkinsonian action, and the same drug, in larger doses, will make the parkinsonism worse and in some cases give a transient parkinsonism; this latter action was more frequent with reserpine, but disappeared spontaneously when these drugs were discontinued.

Bordeleau, J. M., *J. Florida M. A.*, 52:546-554, 1956.

Male Infertility

A review of the management of male infertility was based on 216 cases studied in a four year period. There was close cooperation between the urologist and the gynecologist, the women being treated for any condition that might have been a factor in the cause of sterility.

The normal for sperm accepted was 50 million per cc.; most patients were given therapeutic vitamins, one daily, plus 1 grain thyroid extract t.i.d. and a high-protein diet.

Twelve had normal sperm counts and were not treated; 30 had a definite oligospermia and refused treatment; 30 had azospermia. In 41 cases with oligospermia, standard doses of gonadotrophins were given with 50% improvement, but with no pregnancy. Within this group, there were three hypothyroids treated. One pregnancy followed.

Twenty patients were given larger doses of gonadotrophins (four times the amount)—four pregnancies resulted.

In 27 cases of oligospermia treated, there were four pregnancies.

Twenty-two men were treated with x-ray to the pituitary—three pregnancies resulted; 12 with large doses of Testosterone—no pregnancies.

Of all 133 with oligospermia treated, there were twelve pregnancies.

Best results were obtained with large doses of gonadotrophins.

Maisel, I., *J. M. Soc. New Jersey*, 53:115-117, 1956.

An Adjunct in the Office Treatment of the Low Back Syndrome

Low back pain, with or without radiation to the leg, is now believed by some to be due to derangement of the intervertebral disk in as high as 90% of the cases. In many of these cases, objective findings are not sufficient to require surgery, but the patients are much restricted in activity.

Cole, H. G., et al, *J. Florida M. A.*, 42:643-645, 1956.

Hemolytic Anemia

Jaundice is usually a manifestation of hepatobiliary disease. Most anemias are of the iron-deficiency type. These symptoms, either singly or in combination, may also be a manifestation of hemolysis. Hemolytic anemia is basically a finding, and not truly a diagnosis. It may be due to a congenital defect of hemoglobin structure, abnormal splenic activity, a symptom of disease such as leukemia, lymphoma, carcinoma, retriculo-endotheliosis or certain types of virus respiratory disease. Treatment, if possible, should be directed toward correction of the primary disease. If this is impossible, the nature of the hemolytic mechanism should be ascertained, and therapy is aimed at correcting this abnormality.

It is urged that the physician who meets a problem of anemia, jaundice, or both, consider hemolytic anemia in differential diagnosis.

Epstein, M., *J. M. Soc. New Jersey*, 53:125-127, 1956.

Use of Image Amplifier in Cardiovascular Diagnosis

The image amplifier allows one to do fluoroscopy in a lighted room, thereby allowing cone vision rather than rod vision, saving 15 to 30 minutes. The only apparent disadvantage to this system is that only a 5 inch area can be viewed at any one time. With experience with the instrument, this becomes a minor objection. With the use of the image amplifier, irradiation to the patient and to the personnel can be markedly reduced—by reduction in the tube current due to the intense brightness from the image amplification.

The image amplifier represents a definite advancement in the diagnosis of cardiovascular disease. It allows the use of cone vision, lessens the exposure of the personnel and of the patient to radiation, and it allows one to carry out intracardiac catheterization with complete vision of the catheter at all times. It also permits one to determine the extent and the magnitude of pulmonary blood flow, enables the easy detection of calcium in the aortic and mitral valves, clarifies the problem of extrinsic and intrinsic pulsations in nodules or masses in the lungs and their difference from vascular lesions. Motion pictures may be taken from the visualized pathology for more detailed studies.

Zimmerman, H. A., *J.A.M.A.*, 159:1449-1451, 1955.

Phelantin For Treatment of Epilepsy

Phelantin, a capsule combining 100 mg. of diphenylhydantoin, 30 mg. of phenobarbital and 2.5 mg. of methamphetamine (Desoxyephedrine), was given to 95 epileptic patients. From this group, 48 enjoyed complete freedom from seizures, 8 had more than 50% improvement and 39 were less than 50% improved. In 80% of the completely controlled cases, the patients took Phelantin alone. The drug was more effective against grand mal convulsions than against minor seizures. It is usually well tolerated, and no serious side-effects have been observed. Psychologically, patients benefit by the reduction in the number of pills prescribed. The essential ingredients of this capsule are less expensive in the form of Phelantin than when they are prescribed separately.

Davidson, Jr., D. T., et al, *J.A.M.A.*, 160:766-768, 1956.

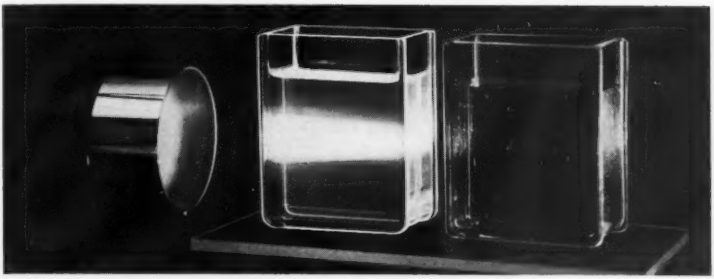
Current Management of Osteoporosis

Osteoporosis occurs most frequently in the post-menopausal state. In such cases it is attributed to a deficiency of steroidal hormones. Gonadal and dietary deficiencies and reduced activity are factors in the development of senile osteoporosis. The osteoporosis associated with hyperadrenalism is believed to be due to an excess of the adrenal cortical "S" hormone of Albright, which is counteracted by androgen therapy. Immobilization produces osteoporosis by reducing the osteoblastic activity; hence, early up-and-about is indicated for a patient who has sustained a pathological fracture. Osteoporosis has developed in the course of disease of which systemic deficiency of protein is a feature, such as acromegaly, hyperthyroidism, avitaminosis and malnutrition. A diet high in proteins is indicated in all types of osteoporosis, also calcium phosporus and vitamins.

Response to therapy is rarely predictable. Patients whose osteoporosis is related to a hormonal deficiency, given estrogens and androgens, get more relief than do those whose cases have no endocrinological basis. In a large number of cases, there is a remission of clinical symptoms within a few weeks after therapy is begun, but x-ray evidence of increased bone density has been obtained in only a few instances. This failure may be attributable to the fact that a large amount of bone must be lost before x-ray detection is possible; however, the improved calcium and protein balances following therapy indicate that some recalcification must occur.

Watts, L., et al, *J. Bowman Gray School Med.*, 13:84-91, 1955.

THIRD REPORT



ANOTHER HIGHLIGHT ON LECITHIN – A NATURAL PHOSPHATIDE

Phosphatides – Clearing Agents of Blood Plasma

Phosphatides have been found in all vegetable and animal cells. There seems little doubt that they are part of the basic structure of protoplasm and also enter into cell metabolism. The most abundantly found phosphatides are the lecithins, whose surface active properties, when combined with proteins and carbohydrates, play an important role as physiologic emulsifiers of fats and oils.[1]

These considerations highlight the importance of *adequate lecithin plasma concentrations:* Phosphatides together with cholesterol are found in plasma in combination with proteins and circulate as lipoproteins.[2] The phosphatides in plasma protein are believed to be highly essential for the stability of the complex colloidal system represented by blood plasma.[3] A phosphatide content of 30% or more seems necessary to keep the plasma clear and non-lipemic;[2] lower concentrations will cause the plasma to remain cloudy. (In human plasma lecithin makes up about 80% of the phosphatides present; others are sphingomyelin and cephalin.[2]) A constantly cloudy, lipemic serum can be considered a sign of disturbed fat metabolism, which has been incriminated in the pathogenesis of many serious disturbances. Research on lecithin's potentially useful role in the management of the more complicated forms of deranged lipid and cholesterol metabolism – as in essential hyperlipemia, idiopathic familial hypercholesteremia, xanthomatosis and diabetes – is now being actively conducted. If you are interested in the progress of this research or if you desire to have clinical trial supplies, won't you write to us?

An excellent source of lecithin is Glidden's "RG" Oil-free Soya Lecithin, a highly purified extract containing a minimum of 95% phospholipids. It is packed in a special 8 oz. container to maintain its purity and freshness and is available at your drugstore.

Investigators of lecithin have used quantities from 7.5 to 30 grams daily in divided doses (3 teaspoonfuls equal 7.5 grams).

Administration: "RG" Lecithin is presented in palatable granules which may be taken plain, in milk, in orange juice or other citrus juice, or sprinkled on cereal.

Literature available on request.

Bibliography: 1. West, E. S., and Todd, W. R.: Textbook of Biochemistry, New York, The Macmillan Co., 1952, p. 184. • 2. Drill, V. A.: Pharmacology in Medicine, New York, McGraw-Hill Book Co., Inc., 1954, p. 64/6. • 3. Ahrens, E. H., Jr., and Kunkel, H. G.: J. Exper. Med. 90:409 (Nov. 1) 1949.

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Prevention of Tetanus

The practice of active immunizing individuals against tetanus should be extended as rapidly as possible to our entire population. This should be one of the objectives of the Civil Defense Program. Meanwhile, those who live in rural areas, particularly those who work with barnyard animals, should be especially urged to avail themselves of the protection afforded by active immunization against tetanus. A booster dose of tetanus toxoid once every ten years will preserve the immunity. Further investigation is needed to determine whether the booster dose is really necessary.

There is readily available a supply of potent tetanus *antitoxin* to be used in treating patients with tetanus who are hypersensitive to horse serum.

Stafford, E. S., *Virginia M. Monthly*, 83:43-44, 1956.

Use of Metrazol in Elderly Patients

Metrazol was used in a group of elderly patients in an attempt to make them more tractable, thereby avoiding institutional care. The symptoms included loss of memory, confusion, nervousness, insomnia, fear of loss of mind and beliefs of not being at home.

Dosage was started with two ¾ grain tablets four times daily. The dose was raised or lowered as required. No unusual blood pressure changes or untoward reactions were observed.

Metrazol has definite value in certain cases of disturbed cerebral circulation, especially in those in which there are no long-standing organic changes. A trial course of Metrazol appears to be indicated in those troublesome cases in which memory loss, etc. might otherwise necessitate institutional care.

Liquid therapy may improve dosage accuracy in those elderly individuals who lose or destroy the tablets or who are suspicious of being poisoned.

Aschenbach, E. H., *M. Ann. District of Columbia*, 25:70-72, 1956.

Effect of Zoxazolamine (Flexin) in Treatment of Spasticity

Zoxazolamine (Flexin) appears to be moderately effective against spasticity due to spinal cord disease. When administered orally, 250 to 500 mg., three and four times a day, 14 of 18 patients showed objective improvement. The effect on spasticity of suprasegmental origin, and on the rigidity of paralysis agitans, is less definite.

Rodriguez-Gomez, M., et al, *J.A.M.A.*, 160:752-754, 1956.

Multiple Myelomatosis Simulating Hyperparathyroidism

A case of multiple myelomatosis with a spontaneous fracture is described. Hypercalcemia, hypercalcuria, normal serum phosphorus in the presence of severe impairment of renal function, and an elevated urinary clearance of phosphate led to the diagnosis of hyperparathyroidism. The parathyroid glands were found to be normal, and at necropsy, myelomatous replacement of the vertebral bodies, invasion of liver sinusoids and myeloma kidney were found. It is important to remember how closely the two diseases may resemble each other.

McGeown, M. G., et al, *Brit. M. J.*, 4958:86-88, 1956.

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Stimulates appetite and growth while relieving hyperactivity, irritability and tenseness. Each tablet contains 10 mg. of vitamin B_{12}, 10 mg. of thiamine mononitrate and .05 mg. of reserpine. *Indications:* underweight and other signs of simple growth failure when the "irritability syndrome" complicates nutritional problems. *Dosage:* 1 to 2 tablets three times daily before meals. May be chewed, swallowed whole or crushed and dissolved in milk. *Supplied:* bottles of 100 tablets.

Atarax *(Roerig)*

Contains hydroxyzine dihydrochloride. Induces peace of mind quickly in the normal (non-psychotic) person under emotional stress. A calming effect is begun within 15 minutes of administration, and it is free from major side effects and toxicity. Therapeutic effect reaches maximum level within two hours after administration and generally disappears after 6 to 20 hours. *Indications:* tension, anxiety, hysterical reactions, climacteric, neurosis, fatigue states, pruritus, headache, dysmenorrhea, senile excitation, peptic ulcer and functional gastrointestinal spasm. In children, for anxiety, restlessness, night terror and hyperactivity. *Dosage:* may range from one or two 10 mg. tablets to four 25 mg. tablets daily, as directed by physician. *Supplied:* bottles of 100 small, sugar-coated tablets in two potencies, 10 mg. (orange) and 25 mg. (green).

Sterisil Vaginal Gel *(Warner-Chilcott)*

A "synthobiotic" agent in gel form. *Indications:* vaginitis and cervicitis of trichomonal and monilial origin. Effective also against hemophilus vaginalis, believed to be etiologically responsible for so-called "nonspecific" vaginitis. *Administration:* topically inserted. Instructions for use on each package. *Supplied:* 1½-ounce tubes with 6 disposable applicators in each package.

Sparine *(Wyeth)*

Ataractic agent for management of the acutely agitated patient. Therapy may be initiated by intravenous injection followed by intramuscular or oral administration. *Indications:* acute mental disturbances of alcoholism, various psychoses and withdrawal symptoms of drug addiction. *Dosage:* as directed by the physician. *Supplied:* tablets of 25 mg., 50 mg. and 100 mg. in bottles of 50 and 500; 200 mg. in bottles of 500. Sparine Injection, 50 mg. per cc. in vials of 2 cc. and 10 cc.

Senokot Tablets
(Purdue Frederick)

A tablet, developed from Cassia acutifolia (senna) pods, that provides stable, gentle, large bowel neuro-peristaltic action without griping or rebound. *Indications:* Treatment and correction of constipation. *Dosage:* as directed by the physician. Usually one or two tablets before bedtime. *Supplied:* bottles of 100 tablets.

Renir *(Massengill)*

A new hypotensive-tranquilizer utilizing the blood-pressure lowering effect of reserpine while minimizing such side effects as nasal congestion, hyperperistalsis, nightmares and mental depression. Each yellow tablet contains reserpine, 0.25 mg., and ephedrine 8.0 mg. *Indications:* mild, moderate and labile hypertension; anxiety and tension states; mild to severe neurosis. *Contraindications:* use with caution in patients with peptic ulcer, mental depression, cardiac conditions and related disorders. *Dosage:* for hypertension, 1 to 3 tablets daily. As a tranquilizer in mentally disturbed states, 2 to 4 tablets daily. *Supplied:* bottles of 100 tablets.

A.P.C. with Demerol *(Winthrop)*

Each analgesic tablet contains aspirin, 200 mg.; phenacetin, 150 mg.; caffein, 30 mg. and 30 mg. of Demerol hydrochloride. *Indications:* cardiovascular conditions, neuritis and bursitis, arthritis, gall-bladder disease, migraine, trauma, minor surgery, toothache and instrumentation. *Dosage:* as determined by physician. *Supplied:* bottles of 100 tablets.

Simpler Substitute for Cardiac Massage

Cardiac arrest presents a critical problem in four different types of clinical situation: in Stokes-Adams disease, during reflex vagal stimulation, during treatment with cardioactive drugs, and during various diagnostic and therapeutic procedures, particularly during anesthesia.

For emergency resuscitation, the desperate and often ineffective thoracotomy has frequently been used.

A method of external electric stimulation has been developed that will arouse the heart from ventricular standstill and will maintain effective, externally paced beats for as long as necessary.

Zoll, P. M., et al., *J.A.M.A.*, 159:1428-1431, 1955.

The Complications of the Trendelenburg Position

In the c-v system these include hydrostatic effects leading to a rise in the cerebral arterial, venous and C.S.F. pressures. There is risk of levelling up the patient too rapidly at the end of the operation if there has been much hemorrhage or when vasomotor tone is depressed.

In the respiratory system, the upward displacement of the diaphragm by the abdominal viscera appreciably reduces the vital capacity. Thus hypoxia and hypercarbia are apt to be aggravated by a distended stomach and the passage of a stomach tube is often worth while. Secretions which collect in the most dependent part—the nasopharynx—should be removed by suction before levelling the table.

The risks of injury to the brachial plexus and to other parts of the body are discussed in relation to the methods employed for securing the patient in the Trendelenberg position. The usual methods of strapping the legs, or of using pelvic or shoulder rests all have disadvantages; these are obviated by a technique which utilizes the principle of skin friction, by means of a special corrugated rubber mattress with special bolsters under the neck, back and Achilles tendons.

Hewer, C. L., *Proc. Roy. Soc. Med.*, 10:764, 1955.

Treatment of Histoplasmosis With MRD-112

A case of histoplasmosis with positive blood culture, skin tests and complement fixation test was treated with a new fungicide, MRD-112. The patient apparently recovered from a form of the disease in which recovery is not the rule.

Ellis, M., et al., *J. Tennessee M. A.*, 48:411-415, 1955.

A New Treatment For Nausea and Vomiting of Pregnancy (Bonamine)

A new chemotherapeutic agent belonging to the antihistamine family, Bonamine (parachloramine) was used in 44 cases of nausea and vomiting of pregnancy. These unselected patients, aged 19 to 43 years, were treated for uncomplicated nausea and vomiting of pregnancy during the first trimester. This group included both primiparas and multiparas of various races. Some patients required only short-term therapy, while others had to be treated into their fourth month. Bonamine was given in 25 mg. doses t.i.d. to 22 patients, b.i.d. to 21 patients, and once a day to one patient.

Complete control of nausea and vomiting, or of vomiting with a few episodes of nausea still occurring, was obtained in 40 of the 44 patients treated.

This drug has a prolonged action, up to 24 hours. Thus, a single bedtime dose of 25 to 50 mg. will in the majority of the cases carry patients through the difficult early morning hours and usually for the entire day. A few patients will need a supplemental 25 mg. dose at 10 A.M.

It is a safe compound to administer to the pregnant woman, and it is the most effective drug ever used by the author for this purpose.

McKenna, C. J., *Am. Pract.*, 6:417, 1955.

Rehabilitation of the Patient with Myocardial Infarction

The earliest possible return of the patient with cardiac disease to useful activity is recommended. This presentation emphasized the unfortunate frequency of total invalidism that occurs unnecessarily because of overcautious medical advice. The practice of telling the patient with myocardial infarction that he can never again engage in a gainful occupation is unfair both to the patient and the physician.

There are 3 basic reasons for this ultra-conservative attitude. These are fear that if the patient is incapacitated or dies from another attack, the physician will be held responsible for having allowed him to return to work; fear that physical effort may contribute to another myocardial infarct, or congestive heat failure; and fear that mental effort and emotional stress involved in working will contribute to further attacks.

Actually, there is less strain on the heart and blood vessels during light work than when these patients are sitting at home—"frustrated, irritated, and always in the way, waiting for another myocardial infarct or death to catch up with them." Of 150 cases of myocardial infarction, the majority returned to work, and a number of patients carried on their occupations for more than 10 years.

Stroud, W. D., et al., *The Heart Bulletin*, 3:116, 1954.

Tuberculosis in Children

The declining incidence of tuberculous infection in the general population focuses attention on the individual tuberculin reactor as a carrier of viable tuberculosis and increases his importance in the control of tuberculosis. Proper care of the child at the time of his first tubercular infection may give a considerable degree of protection against relapse—a matter which is of both

individual and public health concern.

It is proposed that anti-tuberculosis drug treatment be given to the following categories of children with positive tuberculin reaction:

1. All children with evidence of recent (1 year) tuberculin conversion.

2. All children, three years old or under, who are found to have a positive tuberculin reaction.

3. All children with x-ray or bacteriologic evidence of active disease.

Verhoeff, D. & Peck, W. M., *North Carolina M. J.*, 16:511-515, 1955.

Treatment of Pressure Sores

Most pressure sores will heal under conservative methods, plus where necessary, excision of necrosed tissues. Poor results are common when reparative surgery is carried out within a few weeks of acute local infection, in the presence of several sores or where the patient's general condition is poor.

Many paraplegics who have been submitted to prolonged pressure develop a curious loss of elasticity in the tissues around a scar; in these cases pre-operative treatment by grease massage is of the greatest value in facilitating closure of the wound.

In most cases the postoperative period will be spent partly or entirely in the prone position and where necessary, it is an advantage to accustom the patient to the position during the days before operation.

One of the most common and the most dangerous of pressure sores is the so-called sinus sore. It occurs most often over the ischial tuberosity and the femoral trochanter. The visible skin lesion, small and innocent in appearance, is liable to mislead the physician into overlooking the progressive destruction in the deeper tissues.

In the neglected cases it is not unusual to find that a large segment of bone has been destroyed, and that there is further extension from the bone.

Walsh, J. J., *Proc. Roy Soc. Med.*, 47:1116-1119, 1954.

Oxyuriasis in Two Groups of Negro Children

The subjects were selected at random from a nursery school, a private pediatric practice, and an outpatient clinic. Their ages were from 1 to 15 years. Anal swabs, or slides were examined in 12 to 18 hours.

Syrup of piperazine* was used in the positive cases: 1-5 years—100 to 200 mg., t.i.d.; 5-10 years—200 to 300 mg., t.i.d.; 10 years and up—300 to 500 mg., t.i.d. The prescribed dose was administered for 7 days. Twenty four hours after completion of course, a repeat anal swab was made. The second course of 14-day period of therapy followed a 7-day rest period. A third anal swab was taken 24 hours after the final dose.

Of 637 children, 25 (3.9%) were found to be infected. Positive males to females 1 to 2.6.

Not one of the 25 had *complaints* attributed to pinworms. Anal swabs taken 24 hours after the first and second courses of treatment were negative for pinworm ova and larvae in all cases. No untoward reactions to the drugs were noted.

Ferguson, A. D., et al., *M. Ann. District of Columbia*, 24:297-299, 1955.

*Monopiperazine citrate in syrup, *Burroughs Wellcome*.

Rupture of the Urinary Bladder in the Neonatal Period

A premature infant, five days old, was hospitalized with vomiting, abdominal swelling, and a generalized rash which had been present for one day. Uneventful spontaneous delivery had occurred in a near-by town. All was well for the first four days. No trauma to baby or mother, and no disturbances of bowel or bladder function had been noted by the parents.

The infant's weight was five pounds. There was addominal distension, not clinically dehydrated, but there was no abdominal peristalsis. X-rays revealed a dilated small bowel with some fluid levels in upright position, no distention, but air in colon. A diagnosis of mechanical intestinal obstruction was entertained, and surgery was advised.

Under general anesthesia, a right rectus incision opened the peritoneum. Clear serous fluid with some fibrinous strings was found. The small bowel was distended down to the region of the terminal ileum, and the most distant ileum and the large bowel were collapsed. In the terminal ileum, a mechanical obstruction existed. A 2 mm. perforation was found in the dome of the bladder, through which urine flowed rapidly upon removal of the exudate. A sterile catheter, placed in the urethra, emerged into the free peritoneum.

On the fifth postoperative day, the abdomen became distended, and on the sixth an evisceration occurred. A secondary closure was made with through and through interrupted sutures of black silk. Following this, recovery was uneventful. No further urinary-tract complications.

Kroll, V. R., et al, *J. Louisiana State M. Soc.*, 108: 58-60, 1956.

Neonatal Diabetes

Probably only ten cases of neonatal diabetes have been reported. A month-old boy was admitted to the hospital suffering from dehydration. He had been reluctant to take feeding for a few days and had vomited once. His weight was 5½ lb. at birth, he had gained ½ lb. in the first two weeks, but had then been weaned on to artificial feeds. His weight at three weeks was 6¼ lbs., and on admission was only 5 lbs.

There was no abnormality apart from dehydration and weakness. The temperature was 99°. Infection was suspected, and a course of chlortetracycline was begun. He took feedings well at first. The blood was normal, but sugar was found in the urine. Two days later, he vomited

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and became collapsed. Four blood sugar estimations: 12:45 P.M., 1,680 mg. per 100 ml.; 4:30 P.M., 1,980 mg.; 5:30 P.M., 1,620 mg.; and 9:30 P.M., 1,200 mg. C.S.F. 1,200 mg. glucose per 100 ml. Two specimens of urine contained more than 2% of sugar, with small amounts of acetone.

After the first blood-sugar report, an intravenous dextrose-saline infusion (4% dextrose, 0.18% saline) was set up to run at 25 ml. an hour, and soluble insulin was given: 2 units at once, 4 units at 7 P.M., and 10 units at 11 P.M. The latter dose was repeated at 3 A.M., and 7 A.M. the following day. The baby's condition had improved, but he then began to perspire freely, and at 10 A.M., urine contained no sugar. No more insulin was given and 5% dextrose was given by intravenous drip. At 11:30 A.M. there was a sudden collapse and death.

Post-mortem Findings — Blood sugar shortly after death was 325 mg. per 100 ml., urine 0.2% of sugar, with no acetone. Macroscopical examination of the organs revealed a few petechial hemorrhages in the lungs, some fatty change in the liver, and dilation of left renal calices. Microscopical examination revealed glycogen in normal amounts in the liver. Other organs showed normal histology.

Hickish, G., *Brit. M. J.*, 4958:95-96, 1956.

Vascular Nevi

Nevus Flammeus "Port Wine Mark" is a smooth, flat, superficial angioma which varies in color from red to dark purple. It is most often found on the face or neck, and varies in size from a few mm. to a size covering most of the face and neck.

Treatment is usually not necessary, and it is very difficult in the more disfiguring lesions. Cosmetic creams may be used to mask the area. Surgery or irradiation, only if necessary, should be carried out only by an expert. The mild forms often disappear spontaneously in infancy or early childhood.

Capillary Hemangioma or "Strawberry Mark" is a slightly raised, sharply demarcated, bright red spot several mm. to 2 or 3 cm. in diameter. It usually appears during the first six weeks (occasionally present at birth.) Commonly, there is an increase in size for a few months, but few such nevi will continue to increase after 12 months.

Treatment is indicated for those lesions of face, scalp and other areas where trauma or infection may produce bleeding, ulceration and scarring, or are of such size and location as to cause distress before natural regression of the condition has occurred. Carbon dioxide freezing is the treatment of choice, but x-ray irradiation by one trained in this type of therapy also produces satisfactory results if carried out before the age of 18 months.

Many such hemangiomas will spontaneously disappear by 10 years of age, but persistence is not rare.

Cavernous Hemangioma is formed from large, sinus-like blood vessels in the skin and they often have a capillary component. Distribution and behavivor are similar to the capillary type, although most cavernous hemangiomas regress spontaneously. Occasionally, serious hemorrhage results from trauma, and indications for therapy are therefore more liberal than for capillary hemangiomas.

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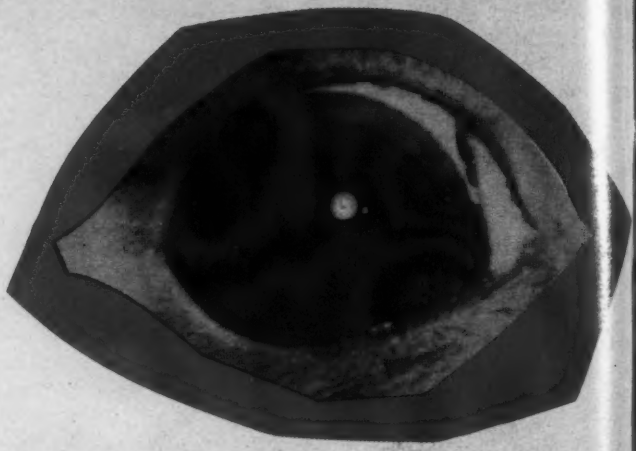

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Treatment of choice is radium or x-ray irradiation, carried out by a physician trained in this field. Injection of sclerosing material is sometimes used in addition to irradiation.

Most lesions will involute spontaneously. Many of them persist, and some may become arteriovenous fistulas with bony erosions, and may even cause death .They occasionally accompany retrolental fibroplasia or internal hemangiomas in vital organs.

Silver, H. K., et al, *Handbook of Pediatrics*, pp. 172.173, 1955.

Pediatric Gonococcal Vaginitis

The two periods when leucorrhea is to be expected and may be a normal finding are the neonatal and the pre-adolescent periods.

Gonorrheal vulvovaginitis is a highly contagious but rare disease. Infection results from direct or indirect contact with the discharge of an infected person, usually an adult. In institutions, the disease may spread from child to child. Toilet seats are of little significance; some form of sexual contact is the usual source.

In mild cases, the vaginal mucosa, urethral meatus and vulva proper are reddened, with a thick, yellow discharge. In more severe cases, there is also edema and much pain. Pruritus may lead to excoriation from scratching and masturbation. As the disease becomes chronic, the infection tends to become localized to the vagina with periods of remission.

All purulent vaginal discharges are suspect until several cultures have proved negative. Culture is essential for diagnosis, especially since other gram-negative intracellular diplococci may be found on the smear.

Until the child is cured, she should not be permitted contact with other children, nor should she attend school. Her clothing and bed linens should be laundered separately. The toilet seat should be kept scrupulously clean. Weekly cultures should be taken for several weeks and then two monthly ones.

Even without therapy, the infection tends to clear of itself. In children over four years of age, suppositories of 2000 international units (I.U.) or 0.1 mg. of diethylstilbestrol may be used nightly for four to six weeks.

Penicillin is the treatment of choice. With doses of 10,000 units per pound of body weight per day, smear and culture become negative in several days. Penicillin should be used primarily in all cases, and the other drugs reserved for resistant ones.

Nonspecific vaginitis is not contagious.

Lang, W. R., *New England J. Med.*, 253:1153-1160, 1955.

Premature Breast Development

Unilateral or bilateral premature development of the breasts may occur in girls at any age. Other secondary sexual characteristics do not develop. The condition generally is transient although it may persist for months or years. The etiology is unknown. No therapy is necessary and the girls generally go on to have a normal puberty. This condition must be differentiated from other conditions producing precocious sexual development.

Silver, H. K., et al., *Handbook of Pediatrics*, p. 169, 1955.

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3. Karnaky, K. J.: South. M. J. 45:1166, 1952.
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5. Ross, J. W.: J. Nat. M. A. 43:20, 1951; 45:223, 1953.

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BOOK REVIEWS

Life Stress and Essential Hypertension

A Study of Circulatory Adjustments in Man, by Stewart Wolf, M.D., University of Oklahoma School of Medicine; Philippe V. Cardon, Jr., M.D., Georgetown University School of Medicine; Edward M. Shepard, M.D., Cornell University Medical College; and Harold G. Wolff, M.D., Cornell University Medical College. The Williams & Wilkins Company, Baltimore. 1955. $7.50

The results of studies on cardiovascular function carried out over the past ten years in the Cornell New York Hospital, including some observations made in the Department of Medicine of the University of Oklahoma. Participating in the work have been teachers in these Universities: Louisiana State, Louisville, Western Reserve, Duke, Washington (State), Vermont and Washington (St. Louis).

In the summary, it is stated that probably the kindest thing to do on discovery of hypertension, when it causes no symptoms, is to the keep the information to oneself. The authors recommend regular vigorous exercise to hypertensive patients whose hearts are not enlarged if no signs of lowered performance or function are present. Further, it is stated that there is evidence to warrant serious interest in the background, life experience and attitude of the patient in the hope of helping him to make a better adjustment.

Clinical Biochemistry

by Abraham Cantarow, M.D., and Max Trumper, Ph.D. Fifth Edition. W. B. Saunders Co. Philadelphia and London. 1955. $9.00

This new edition of a book first published a quarter-century ago expresses pleasure that it can now discuss the problems of such a book in terms which practicing physicians understand, and the hope to thus provide a better basis for an understanding of biochemical aberrations of these processess in disease. Every chapter has been revised and much new material added, particularly on: liver function, kidney function, plasma protein abnormalities, uric acid metabolism, biochemical aspects of diet, lipoproteins, endocrine functional diagnosis, iodine metabolism, potassium metabolism. Material that has no relevance to biochemical approaches to diagnosis or management of clinical disorders has been excluded.

Surgery of the Ambulatory Patient

by L. Kraeer Ferguson, M.D., F.A.C.S., with a section on Fractures by Louis Kaplan, M.D., F.A.C.S. Third edition with 664 illustrations. J. B. Lippincott Company, Philadelphia. Montreal. 1955. $12.00

It cannot be doubted that a large percentage of the surgery now done in hospitals should be done in offices, in the best interests of the patient. But it is much more convenient to the surgeon to send the patient into the hospital, and now that so large a number of our population carries hospital insurance which can be stretched to cover the expense of minor surgical procedures, very little surgery is done on the ambulatory patient other than that done in the out-patient department of hospitals.

This edition is a complete revision of an excellent book on an important subject. Its teachings, put into practice, would save patients time and money and add materially to the income and prestige of their very best friend—the family doctor.

The Neuroses in Clinical Practice

by Henry P. Laughlin, M.D., George Washington School of Medicine. W. B. Saunders Company, Philadelphia. London. 1956. $12.50

A discussion of the neuroses which the author encountered in his own practice. It has been written in the hope that each reader may find something of interest and use to him. This is a worthy ambition, and, in the opinion of this reviewer, his objective has been achieved.

Clinical Medicine
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July, 1956